

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Central Illinois Energy Cooperative  
Attn: Michael W. Smith  
23133 East County Highway 6  
Canton, Illinois 61520

Application No.: 02090041

I.D. No.: 057803AAD

Applicant's Designation: CANTONETOH

Date Received: September 23, 2002

Subject: Ethanol Plant

Date Issued: November 13, 2002

Location: 23133 East County Highway 6, Canton

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a primary boiler with limestone bed injection and flue gas desulfurization, secondary boiler with cyclone, coal handling equipment ( ), a methanator flare, distillers grain drying equipment ( ), corn handling equipment ( ), cooking/fermentation/liquefaction equipment ( ), distillation equipment ( ), finished product tanks ( ), loadout operations, traffic fugitives and ethanol loadout fugitives as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Unit Specific Conditions

1.1 Group 1: Utilities

1.1.1 Description

Natural gas/coal fired boilers are used to produce electricity and steam for manufacturing needs.

1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description/Date of Construction	Emission Control Equipment
Group 1	Utilities	Coal Fired Primary Boiler #1 (211 mmBtu/hr)	Limestone Bed Injection and Flue Gas Recirculation
		Natural Gas-Fired Secondary Boiler (135 mmBtu/hr Each)	None

1.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected utility unit" for the purpose of these unit specific conditions is a natural gas/coal fired boiler used for production of electricity and steam for manufacturing needs.
- b. Coal Fired Boiler #1:
  - i. Coal Fired Boiler #1 shall not exceed 0.15 kg of particulate matter per MW-hr of actual heat input in any one hour period (0.10 lbs/mmBtu/hr) pursuant to 35 IAC 212.201.
  - ii. No person shall allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hr) to exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].
  - iii. Coal Fired Boiler #1 shall not exceed 1.39 kg/MW-hr (0.9 lbs/mmBtu) of nitrogen oxides pursuant to 35 IAC 217.141(b).
  - iv. Coal Fired Boilers #1 shall not exceed and shall be determined as 0.43 lbs \* % S. of sulfuric acid per ton of coal burned and 0.15 lbs of hydrogen fluoride per ton of coal burned as determined by AP-42.
- c. Natural Gas-Fired Secondary Boiler:
  - i. No person shall allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hr) to exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].
  - ii. Natural gas fired boilers #4 and #5 shall not exceed 1.39 kg/MW-hr (0.3 lbs/mmBtu) of nitrogen oxides pursuant to 35 IAC 217.141(a).
- d. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of an affected boiler, including the coal pulverizer, the ash removal system, and the electrostatic precipitator, the Permittee is authorized to continue operation of the affected boilers in violation of the applicable requirements of Conditions 1.1.3(b) (c)

and (d), as necessary to provide essential service, prevent risk of injury to personnel or severe damage to equipment, or if shutting down the boiler would lead to a greater amount of emissions during subsequent startup than would be caused by continuing to run the boiler for a short period until repairs can be made. This authorization is subject to the following requirements:

- i. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable repair the affected boiler(s) or remove the boiler(s) from service, so that excess emissions cease. This shall be accomplished within 24 hours or noon of the Illinois EPA's next business day, whichever is greater, unless the Permittee obtains an extension from the Illinois EPA. The Illinois EPA may grant such extension if the Permittee demonstrates that the affected boiler(s) could not be reasonably repaired or removed from service within the allowed time and that, based on the actions which have been taken and will be taken, the Permittee is taking reasonable steps to minimize excess emissions and will repair the affected boiler(s) or remove it from service as soon as practicable.
  - ii. The Permittee shall fulfill all applicable recordkeeping and reporting requirements of Conditions 1.1.9 and 1.1.10.
  - iii. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.
- e. Startup Provisions

The Permittee is authorized to operate the affected boiler(s) in violation of the applicable limits of Conditions 1.1.3(b) (c) and (d) during startup pursuant to 35 IAC 201.262, as the Permittee has affirmatively demonstrated that all reasonable efforts have been made to minimize startup emissions, duration of individual startups and frequency of startups. This authorization is subject to the following requirements:

- i. This authorization only extends for a period of up to 10 hours following initial firing of fuel during each startup event. This limitation shall not apply when extended low temperature operation of the boiler is necessary for replacement refractory curing or other required maintenance activities.
- ii. The Permittee shall conduct startup of the affected boiler(s) in accordance with the manufacturer's written or electronic instructions or other written or electronic instructions maintained on the site that are specifically developed to minimize excess emissions from both "cold" and "hot" startups and that include, at a minimum, the following measures:
  - A. Review of the operational condition of the affected boiler(s) prior to initiating startup of the boiler;  
  
Note: Corn Products International does not have physical capability to burn gas and does not have oil burners, only igniters which would result in poor combustion and from which soot would foul the ESPs. Using the oil igniters to "warm" the boiler up prior to introducing coal is not part of the manufacturer's recommended startup procedures.
  - B. Periodic review of the operating parameters of the affected boiler(s) during each startup accompanied by appropriate adjustments to the startup to reduce or eliminate excess emissions; and
  - C. Timely energization of the electrostatic precipitator(s) as soon as this may be safely accomplished without damage or risk to personnel or equipment.

#### 1.1.4 Non-Applicability of Regulations of Concern

For the coal fired boiler, the emission standard for sulfur dioxide emissions established 35 IAC 214.141 is not applicable because an Alternative Emission Standard was established by Illinois Pollution Control Board on November 18, 1983.

#### 1.1.5 Operational and Production Limits and Work Practices

##### a. Natural Gas-Fired Boilers:

- i. Only natural gas shall be used as a fuel for the boilers.
- ii. Emissions of nitrogen oxides from boiler #6 shall be controlled by the use of low NO<sub>x</sub> burners and flue gas recirculation.
- iii. Emissions of carbon monoxide (CO) from boiler #6 shall be controlled by good combustion techniques.
- iv. The maximum firing rate of boiler #6 shall not exceed 600 mmBtu/hr.

#### 1.1.6 Emission Limitations

The affected utility units shall not exceed the following limits:

##### Natural Gas-Fired Boiler:

CO	PM*	VOM	NO <sub>x</sub>	SO <sub>2</sub>
(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)
	)	r)	)	)
72.0	3.0 13.1	3.24	30.0	0.4
315		14.2	131.4	1.6

\* Filterable particulate matter

The above limitations contain revisions to previously issued Permit 91020069. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and Prevention of Significant Deterioration of Air Quality Regulations (PSD) of 40 CFR 52.21. These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the

equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, VOM emissions have been increased based on the new AP-42 standard emission factors for external fuel combustion emission units. [T1R].

1.1.7 Testing Requirements

- a. Upon reasonable request from the Illinois EPA or USEPA, emissions of nitrogen oxides and sulfur dioxide from the gas turbines shall be measured in accordance with requirements of 40 CFR 60.335.
- b. Upon reasonable request from the Illinois EPA or USEPA, emissions of nitrogen oxides from natural gas fired boiler #6 shall be measured in accordance with requirements of 40 CFR 60.46b.

1.1.8 Monitoring Requirements

a. Natural Gas-Fired Boilers

The Permittee shall operate a flow metering device and a continuous emissions monitoring systems (CEMS) to monitor and record the following in accordance with the provisions of 40 CFR 60.48b:

- i. Natural gas consumption.
- ii. Nitrogen oxide emissions discharged to the atmosphere as required by the applicable parts of 40 CFR Part 60.

b. Coal Fired Boilers:

Pursuant to 35 IAC 201.401(a)(1)(A) the Permittee shall install, operate, calibrate and maintain continuous monitoring equipment for the measurement of opacity from affected coal fired boilers. For the purpose of this requirement, a single monitoring system may be operated for a point in a stack which is common to a pair of affected boilers.

- i. This monitoring equipment shall be operated pursuant to written or electronic monitoring procedures that include a quality assurance/control plan, which procedures shall reflect the manufacturer's instructions as adopted by the Permittee based on its experience;

- ii. This monitoring equipment shall meet the performance specifications and operating requirements in Sections 3.1 through 3.8 of 40 CFR 51, Appendix P (1987; and
- iii. Notwithstanding the above, monitoring pursuant to 35 IAC 201.401 is not applicable during any period of a monitoring system or device malfunction if the Permittee demonstrates that the malfunction was unavoidable and is being repaired as expeditiously as practicable, pursuant to 35 IAC 201.404.

1.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected utility units to demonstrate compliance with conditions of this permit:

a. Natural Gas-Fired Boiler:

- i. Natural gas consumption (mmscf/day and mmscf/yr);
- ii. Emissions of regulated air pollutants calculated based on compliance procedure established in Condition 1.1.12;
- iii. Records of maintenance, calibration and operational activity associated with continuous monitoring equipment; and
- iv. Hours of operation (hours/day and hours/year).

b. Coal Fired Boilers:

- i. Total operating hours (hours/month and hours/year) for each affected coal fired boiler;
- ii. Amount of coal consumed (tons/month and tons/year) and records for sulfur content (wt. %) in the coal received. Mine analysis of the coal supplied to the Permittee may be used to satisfy coal sampling requirements, provided that sampling and analysis follow ASTM methods; and
- iii. Pursuant to 35 IAC 201.407, the Permittee shall maintain records for the opacity monitoring system on each affected boiler that as a minimum shall include:

- A. Opacity measurements.
  - B. Continuous monitoring system performance testing measurements.
  - C. Performance evaluations and other quality assurance/control activities.
  - D. Calibration checks.
  - E. Maintenance and adjustment performed.
  - F. Periods when the monitor was inoperative, with date, time and reason.
  - G. Quarterly reports submitted in accordance with Condition 1.1.10.
- e. Records for Startups:
- i. Records of the source's established startup procedures for affected boilers; and
  - ii. Records for each startup of an affected boiler that results in excess of opacity or regulated air pollution emissions.
- f. Records for Continued Operation during Malfunctions and Breakdowns:
- i. A maintenance and repair log for each affected boiler and associated control equipment, listing each activity performed with date; and
  - ii. Records for each incident when operation of an affected boiler continued during malfunction or breakdown, including the following information:
    - A. Date and duration of malfunction or breakdown.
    - B. A description of the malfunction or breakdown.
    - C. The corrective actions used to reduce the quantity of emissions and the duration of the incident.
    - D. If excess emissions occurred for four or more hours:

An explanation why continued operation of the affected boiler was necessary.

The preventive measures planned or taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.

An estimate of the magnitude of excess emissions during the incident.

#### 1.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the emission limitations as follows pursuant to Section 39.5(7) (f) (ii) of the Act:

a. Natural Gas-Fired Boiler:

The Permittee shall submit a quarterly report containing the information required under 40 CFR 60.49b(i). All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter [40 CFR 60.49b(i)]. The semi-annual monitoring report submission requirement in 8.6.1 is waived in favor of the above more frequent reporting requirement.

b. Coal Fired Boilers:

Pursuant to 35 IAC 201.405, the owner or operator of the source subject to the continuous monitoring requirements shall report the following information on a quarterly basis:

- i. For periods of emissions in excess of any emission limitations established by this section:
  - A. The starting date and time of the excess emissions;
  - B. The duration of the excess emissions;
  - C. The magnitude of excess emissions;

- D. The cause of the excess emissions, if known;
  - E. Corrective actions and actions taken to lessen the emissions;
  - F. The operating status of the monitoring system, including the dates and times of any periods during which it was inoperative; and
  - G. Other information, including but not limited to, monitoring location, monitoring maintenance records and operating hours.
- ii. For opacity measurements, the report shall be based on six-minute averages of opacity and contain:
    - A. The percent opacity for each continuous opacity excess period; and
    - B. The start and stop time in six minute increments of any opacity measurements in excess of the limits established by this permit.
  - iii. If there were no excess emissions during the reporting period, the report shall so state and include information about the operating status of the monitoring equipment during that period.
  - iv. Reports shall be submitted within 45 days of the end of every calendar quarter.
- c. If there is an exceedance of the emission limitations of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

- a. For purposes of avoiding interruption of steam and heat supply due to malfunction and temporary shutdown

of the primary coal fired boiler and natural gas fired boiler, the following boilers are allowed to operate temporarily at this location during all necessary repair service being performed on the primary boilers:

- i. When one or more coal boilers, or any 2 gas boilers are out of service: natural gas fired boilers with the actual heat input of each boiler limited to 83.5 mmBtu/hr and a total heat input limited to 250.5 mmBtu/hr.
- ii. When one or more coal boilers are out of service: #2 fuel oil fired boilers with the actual heat input of each boiler limited to 30.0 mmBtu/hr.
- b. Amount of fuels consumed by these boilers shall not exceed the following limits:
  - i. Natural gas: 63 mmscf/mo for each boiler.
  - ii. Fuel oil #2 (total): 181,835 gal/mo.
- c. The Permittee has to immediately inform the Illinois EPA about proposed installation of the temporary boiler(s) along with construction application for this project. Such application shall reflect the limitations established in conditions listed above and demonstration of compliance with 40 CFR 52.21 and 40 CFR 60, Subpart Dc.
- d. For the purposes of maintaining plant air compressors and avoiding loss of instrument air to critical plant systems, the Permittee is authorized to utilize temporary diesel air compressors as shown in application 96010009, during emergencies or maintenance. This is considered to be an insignificant activity under 35 IAC 201.210(a) (16) and 35 IAC 201.210(b) (29).

#### 1.1.12 Compliance Procedures

- a. Compliance with the opacity limitation of Condition 5.2.2(b) is addressed by the continuous opacity monitoring system for coal fired boilers #1, #2, and #3.
- b. Compliance with PM emission limitations of Condition 1.1.3(b) (i) for Coal Fired Boilers #1, #2, and #3 is achieved by the operation of electrostatic precipitators.

- c. Compliance with CO, NO<sub>x</sub> and SO<sub>2</sub> limitations for all boilers and turbines are achieved by inherent operation of affected fuel combustion emission units. Compliance with the nitrogen oxides standard for boiler #6 is determined in accordance with the applicable method in 40 CFR 60.46b(e) (3).
- d. Compliance with emission limitations of Condition 1.1.6(a) for Boiler #6 shall be based on the recordkeeping requirements in Condition 1.1.9 and the emission factors and formulas listed below:

- i. AP-42 Emission Factors

<u>Pollutant</u>	Natural Gas Emission Factors (lb/mmBtu)
PM <sub>10</sub> , Filterable	0.00186
SO <sub>2</sub>	0.000588
VOM	0.005392

Emissions (lb) = actual firing rate multiplied by the appropriate emission factor listed above.

- ii. Manufacturer's Guarantee Emission Factors

<u>Pollutant</u>	Natural Gas Emission Factors (lb/mmBtu)
NO <sub>x</sub>	0.05
CO	0.12

Emissions (lb) = actual firing rate multiplied by the appropriate emission factor and hours of operation.

- e. Compliance with emission limitations of Condition 1.1.6(b) for the turbines shall be based on the recordkeeping requirements in Condition 1.1.9 and the emission factors and formulas listed below:

## i. AP-42 Emission Factors

Natural Gas Emission Factors (lb/mmBtu)	
<u>Pollutant</u>	<u>(lb/mmBtu)</u>
PM <sub>10</sub> , Filterable	0.0193
SO <sub>2</sub>	0.0006

Emissions (lb) = actual firing rate multiplied by the appropriate emission factor listed above.

## ii. Manufacturer's Emission Factors

Natural Gas Emission Factors (lb/mmBtu)	
<u>Pollutant</u>	<u>(lb/mmBtu)</u>
NO <sub>x</sub>	0.09
CO	0.264
VOM	0.00315

Emissions (lb) = actual firing rate multiplied by the appropriate emission factor.

1.2 Group 2: Fly Ash Processing Units

## 1.2.1 Description

Fly ash (by-product of coal burning) is transferred from hoppers to the primary collector where it drops through air locks into the fly ash storage silo. Displaced air from the fly ash storage silo is filtered through the bin vent dust filter. Exhaust air from the primary collector is routed through the hydrovac dust filter and then into the water recirculation tank. Stored fly ash is eventually loaded out wet to trucks by mixing with water in the hydromix conditioner located under the fly ash storage silo. Boiler bottom ash is slurried to the hydrobin water decant tank where it is subsequently loaded out wet to trucks. Water separated from the bottom ash in the hydrobin decant tank is returned to the hydrovac water recirculation tank.

## 1.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description	Emission Control Equipment
Group 2	Fly Ash Processing Units	Primary Collector Cyclone	?
		Fly Ash Storage Silo	Bin Vent Filter

1.2.3 Applicability Provisions and Applicable Regulations

- a. An "affected fly ash processing unit" for the purpose of these unit specific conditions is equipment for storage and transfer of fly ash.
- b. The affected fly ash processing equipment is subject to 35 IAC 212.322(b)(1), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any existing process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced prior to April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (See also Attachment 2) [35 IAC 212.322(a)].

1.2.4 Non-Applicability of Regulations of Concern

None

1.2.5 Operational and Production Limits, and Work Practices

The Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.321 shall be met at all times. Proper maintenance shall include the following minimum requirements:

- a. Visual inspection of air pollution control equipment;
- b. Maintenance of an adequate inventory of spare parts; and
- c. Expeditious repairs, unless the emission unit is shutdown.

1.2.6 Emission Limitations

None

1.2.7 Testing Requirements

None

1.2.8 Monitoring Requirements

None

1.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for this equipment to demonstrate compliance with Condition 1.2.6:

- a. Recordkeeping of maintenance and repair [35 IAC 212.324(g)]:
  - i. Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment.
  - ii. The owner or operator shall document any period during which any process emission unit was in operation when the air pollution control equipment was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made.
  - iii. A written or electronic record of the inventory of all spare parts not readily available from local suppliers shall be kept and updated.
  - iv. Copies of all maintenance and repair records shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA.
  - v. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.
- b. Total amount of fly ash produced/processed, tons/month and tons/year.

- c. Monthly and annual emissions of PM<sub>10</sub> calculated in accordance with compliance procedures established in Condition 1.2.12.

#### 1.2.10 Reporting Requirements

Compliance Section of non-compliance with the emission limitations and emissions of PM as follows:

If there is an exceedance of the emission limitation of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

#### 1.2.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 1.2.12 Compliance Procedures

- a. Compliance with the particulate matter limitations in this section is assured and achieved by the proper operation and maintenance of the pollution control equipment and the work-practices inherent in operation of the affected fly ash processing unit.
- b. For purposes of calculation PM<sub>10</sub> emissions from the affected fly ash processing units, the following equation shall be used:

$$\text{PM}_{10} \text{ Emissions}^* = (\text{Air flow, cfm}) \times (\text{Estimated Dust Loading, gr/scf}) \times (1 \text{ lb}/7,000 \text{ gr}) \times (60 \text{ minutes/hr}) \times [1 - (\text{Filter Efficiency (\%)} / 100)].$$

- \* As specified by the manufacturer or vendor of the filter, or air testing of the actual equipment, or testing of similar equipment at this or other facilities, or based on vendor or manufacturer outlet concentration guarantees or predicted outlet emission performance, or based on the standard EPA emission factors such as AP-42. If compliance testing has been conducted to

determine mass emission rates, then the test data may be used in lieu of the above. Vendor outlet concentration guarantees and predicted performance, or experience with similar equipment, may be used in place the equation above.

### 1.3 Group 3: Dry Starch Unit

#### 1.3.1 Description

In the production of dry starch, the starch slurry is dewatered. The discharged starch cake has a reduced moisture content and is further dried by direct fired natural gas flash dryers. The dry starch is then bagged or loaded for shipment in trucks and railcars.

#### 1.3.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description/Date of Construction	Emission Control Equipment
Group 3	Dry Starch Unit	Bldg 25 Packaging Equip. Prior to 1972	Filter
		Bldg 25 Railcar Bulk Loading, 1975	Filters
		Starch Storage Silos #1 - #3, 1975	Filters
		Bldg 25 Truck Bulk Loading, 1975	Filter
		Starch Transport to Bldg 25 Packing Hopper, 1975	Cyclone and Filter
		Calcium Carbonate Bag Dump and Hopper, 1975	Filter
		Starch Storage Silos #4 and #5, 1975	Filters
		Bldg 27A Starch Flash Dryer, Prior to 1972	Wet Scrubber and Cyclones
		Bldg 27B Starch Flash Dryer, Prior to 1972	Wet Scrubber and Cyclones
		Bldg 27C Starch Flash Dryer, 1975	Wet Scrubbers and Cyclones
		Spray Dryer, 1997	Cyclone and Dust Collector

1.3.3 Applicability Provisions and Applicable Regulations

- a. An "affected dry starch unit" for the purpose of these unit specific conditions is a number of drying, packaging and loading operations of starch products.
- b. Each affected dry starch unit is subject either to 35 IAC 212.321(b) (1) or 35 IAC 212.322(b) (1), which provide that:
  - i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].
  - ii. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (See also Attachment 2) [35 IAC 212.322(a)].

1.3.4 Non-Applicability of Regulations of Concern

The operations of this facility are exempted from the control requirements of 35 IAC Part 218, Subpart TT because this facility is involved in vegetable oil extraction and processing, and pursuant to 35 IAC 218.980(f) such operations are exempted from applicability of Subpart TT.

1.3.5 Operational and Production Limits and Work Practices

For any process emission unit located in the PM<sub>10</sub> non-attainment areas designated in 35 IAC 212.324(a), the Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.324 shall be met at all times. Proper maintenance shall include the following minimum requirements, pursuant to 35 IAC 212.324(f):

- a. Visual inspection of air pollution control equipment;
- b. Maintenance of an adequate inventory of spare parts;  
and
- c. Expeditious repairs, unless the emission unit is  
shutdown.

1.3.6 Emission Limitations

An affected dry starch unit is subject to the following:

- a. See Attachments in Section 10 for other operating and  
emission limits established in the Construction  
Permit 93010072. These limits ensure that the  
construction and/or modification addressed in the  
aforementioned Construction Permit does not  
constitute a new major source or major modification  
pursuant to Title I of the CAA, specifically 35 IAC  
Part 203 [T1].
- b. Compliance with annual limits shall be determined  
based on the 12 months of data.

1.3.7 Testing Requirements

None

1.3.8 Monitoring Requirements

None

1.3.9 Recordkeeping Requirements

The Permittee shall maintain records of the following  
items for the affected dry starch unit to demonstrate  
compliance with conditions of this permit:

- a. Recordkeeping of maintenance and repair [35 IAC  
212.324(g)]:
  - i. Written or electronic records of inventory and  
documentation of inspections, maintenance, and  
repairs of all air pollution control  
equipment.
  - ii. The owner or operator shall document any  
period during which any process emission unit  
was in operation when the air pollution  
control equipment was not in operation or was  
malfunctioning so as to cause an emissions  
level in excess of the emissions limitation.

These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made.

- iii. A written or electronic record of the inventory of all spare parts not readily available from local suppliers shall be kept and updated.
  - iv. Copies of all maintenance and repair records shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA.
  - v. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.
- b. Monthly and annual emissions of PM<sub>10</sub> calculated in accordance with compliance procedures established in Condition 1.3.12.

#### 1.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the emission limitations as follows:

If there is an exceedance of the emission limitations of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

#### 1.3.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 1.3.12 Compliance Procedures

- a. Compliance with the particulate matter limitations in this section is assured and achieved by the proper operation and maintenance of the dust collectors as required by this section and the work-practices inherent in operation of the affected dry starch unit.
- b. To determine compliance with Condition 1.3.6, emissions of PM<sub>10</sub> from the affected dry starch unit shall be calculated based on the following:

PM Emissions\* = (Air flow, cfm) x (Estimated Dust Loading, gr/scf) x (1 lb/7,000 gr) x (60 minutes/hr) x [1 - (Filter Efficiency (%)/100)].

\* As specified by the manufacturer or vendor of the filter, or air testing of the actual equipment, or testing of similar equipment at this or other facilities, or based on vendor or manufacturer outlet concentration guarantees or predicted outlet emission performance, or based on the standard EPA emission factors such as AP-42. If compliance testing has been conducted to determine mass emission rates, then the test data may be used in lieu of the above. Vendor outlet concentration guarantees and predicted performance, or experience with similar equipment, may be used in place the equation above.

#### 1.4 Group 4: Dextrose Unit

##### 1.4.1 Description

The Dextrose Unit produces crystalline dextrose from liquid sugar supplied by another part of the plant. Liquid sugar is cooled in crystallizers, followed by separation of the crystals and remaining liquid in centrifuges. Wet dextrose crystals are first dried in rotary dryers and then packed in bags, or loaded for shipment in railcars or trucks.

## 1.4.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description/Date of Construction/Modification	Emission Control Equipment
Group 43	Dextrose Unit	Building 46 Anhydrous Cerelose Dryer and Cooler System, Prior to 1972	Cyclones and Wet Scrubber
		"C" Sugar Dryer, 1975	Cyclone and Wet Scrubber
		"A" Sugar Dryer, 1989	Cyclone and Wet Scrubber
		"E" Sugar Dryer, 1980's	Cyclone and Wet Scrubber
		"D" Sugar Dryer, Prior to 1972	Cyclone and Wet Scrubber
		Bulk Sugar Transport Systems #1-#3, 1980's	Filters
		"A" Dryer Transport Exhauster, 1980's	Cyclone and Filter
		"D" Dryer Transport Exhauster, 1980's	Cyclone and Filter
		"E" Dryer Transport Exhauster, 1980's	Cyclone and Filter
		"C" Dryer Transport Exhauster, 1980's	Cyclone and Filter
		2401 Sugar Transport Blower, 1980's	Filter
		2034(2054) Sugar Transport Blower (Unidex 1), 1980's	Filter 48A20-01
		2031 and 2034 Bulk Sugar Transport System (Royal T), 1995	Filters 48A35-01 48A124
		#1 and #2 Melt Tank and Bag Dump, 1980's	Wet Scrubbers
		Bulk Loading Dust Collecting System, 1980's	Wet Scrubber
		House Dust Pickup System Off Puff and Packer Control Hoppers, 1980's	Wet Scrubber 48A36-1
		Sugar Packers, 1980's	Wet Scrubber
		2034 Bldg Sugar Drying/Cooling and Sugar Product Conveying and Handling, 1980's	Filter 34S02

Emission Unit	Equipment	Description/Date of Construction/Modification	Emission Control Equipment
		"B" Sugar Dryer, 1993	Cyclone, Scrubber
		"B" Sugar Dryer Transport System, 1993	Cyclone, Filter
		Fine Grade Dextrose Channel Mill, 1993	Filter 48A120
		Dextrose Product Receiver (2nd Unidex), 1997	Filter 34A31
		Fluid Bed Dryer System (2nd Unidex), 1997	Filter
		Product Collector Rejects (2nd Unidex), 1997	Filter
		Pneumatic Conveying System #2 (2nd Unidex), 1997	Filter 48A330
		VFG Dextrose Transport Line and Storage Silo, 1998	Filter
		Dextrose Conditioning Silos, 1998	Filters
		B44 Dry Sugar Bagging, 2000	Filter

#### 1.4.3 Applicability Provisions and Applicable Regulations

- a. An "affected dextrose unit" for the purpose of these unit specific conditions combines a number of operations where liquid dextrose is crystallized, dried, transported, stored, and packed in bags or loaded out in bulk by truck or rail.
- b. An affected dextrose unit is subject either to 35 IAC 212.321(b) (1) or 35 IAC 212.322(b) (1), which provide that:
  - i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].

- ii. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any process emission unit for which construction or modification commenced prior to April 14, 1972, which either alone or in combination with the emission of particulate matter from all other similar process emission units at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.322 (See also Attachment 2) [35 IAC 212.322(a)].

#### 1.4.4 Non-Applicability of Regulations of Concern

The operations of this facility are exempted from the control requirements of 35 IAC Part 218, Subpart TT because this facility is involved in vegetable oil extraction and processing, and pursuant to 35 IAC 218.980(f) such operations are exempted from applicability of Subpart TT.

#### 1.4.5 Operational and Production Limits and Work Practices

For any process emission unit located in the PM<sub>10</sub> non-attainment areas designated in 35 IAC 212.324(a), the Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.324 shall be met at all times. Proper maintenance shall include the following minimum requirements, pursuant to 35 IAC 212.324(f):

- a. Visual inspection of air pollution control equipment;
- b. Maintenance of an adequate inventory of spare parts; and
- c. Expeditious repairs, unless the emission unit is shutdown.

#### 1.4.6 Emission Limitations

In addition to Condition 5.2.2, an affected dextrose unit is subject to the following:

##### a. Dextrose Conditioning Silos

Emissions and operation of the silos shall not exceed the following limits:

Total Exhaust (scfm)	PM <sub>10</sub> Emissions	
	(Lb/Hr)	(Ton/Yr)
14,914	1.319	5.8

The above limitations were established in Construction Permit 98070021, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned Construction Permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

- b. See Section 10.1, Attachment 1 for the operating and emission limits established in the Construction Permit(s) and addressing other emission units. These limits ensure that the construction and/or modification addressed in the aforementioned Construction Permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

1.4.7 Testing Requirements

None

1.4.8 Monitoring Requirements

None

1.4.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected dextrose unit to demonstrate compliance with conditions of this permit, pursuant to Section 39.5(7)(b) of the Act:

- a. Recordkeeping of maintenance and repair [35 IAC 212.324(g)]:
  - i. Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment.
  - ii. The owner or operator shall document any period during which any process emission unit was in operation when the air pollution control equipment was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made.

- iii. A written or electronic record of the inventory of all spare parts not readily available from local suppliers shall be kept and updated.
  - iv. Copies of all maintenance and repair records shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA.
  - v. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when air the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.
- b. Monthly and annual emissions of PM<sub>10</sub> calculated in accordance with compliance procedures established in Condition 1.4.12.

#### 1.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the emission limitations as follows:

If there is an exceedance of the emission limitation of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

#### 1.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 1.4.12 Compliance Procedures

- a. Compliance with the particulate matter limitations in this section is assured and achieved by the proper

operation and maintenance of the scrubbers and filters as required by this section and the work-practices inherent in operation of the dextrose unit.

- b. To determine compliance with Condition 1.4.6, emissions of PM<sub>10</sub> from the affected dextrose unit shall be calculated based on the following:

$$\text{PM Emissions}^* = (\text{Air flow, cfm}) \times (\text{Estimated Dust Loading, gr/scf}) \times (1 \text{ lb}/7,000 \text{ gr}) \times (60 \text{ minutes/hr}) \times [1 - (\text{Control Device Efficiency} (\%)/100)].$$

- \* As specified by the manufacturer or vendor of the filter, or air testing of the actual equipment, or testing of similar equipment at this or other facilities, or based on vendor or manufacturer outlet concentration guarantees or predicted outlet emission performance, or based on the standard EPA emission factors such as AP42. If compliance testing has been conducted to determine mass emission rates, then the test data may be used in lieu of the above. Vendor outlet concentration guarantees and predicted performance, or experience with similar equipment, may be used in place the equation above.

## 1.5 Group 5: Germ Processing Facility

### 1.5.1 Description

Dried germ is received/unloaded, stored, and prepared for hexane extraction of corn oil from the germ utilizing a highly efficient solvent recovery system. In the corn oil extraction process over 99%+ of the extraction solvent is captured and returned for reuse in the process. The crude corn oil which has been extracted from the germ is next sent to the vegetable oil refinery unit for further processing and the remaining spent germ flake is transferred to the co-products portion of the wet milling and co-products unit for mixing with fiber to make corn gluten animal feed.

## 1.5.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description/ Date of Construction	Emission Control Equipment
Group 5	Germ Processing Facility	Germ Unloading, 1993	Baghouse 85A02
		Argo Germ Pneumatic Conveyor and Baghouse/ Receiver, 1993	Baghouse 85A01
		Germ Processing - Dry Preparation Systems and Storage, 1993	Baghouse 86A09
		Germ Processing - Wet Preparation, 1993	Wet Scrubbers
		Germ Processing - Mineral Oil Absorber, 1993	Mineral Oil Absorber, Condensers
		Germ Processing - Spent Flake Finishing, 1993	None
		Corn Oil Refining and Loadout, 1993	None
		Safety Sump, 1993	None
		Dryer/Cooler, 1993	Baghouse 87A12
		Cooling Tower, 1993	None

## 1.5.3 Applicability Provisions and Applicable Regulations

- a. An "affected germ processing facility" for the purpose of these unit specific conditions is an oil extraction plant.
- b. An affected germ processing facility is subject to 35 IAC 212.321(b)(1), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified

in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].

#### 1.5.4 Non-Applicability of Regulations of Concern

The affected germ processing facility is exempted from applicability of 35 IAC Part 215, Subpart G because the hexane released from this facility is not a photochemically reactive material and does not create any odor nuisance.

#### 1.5.5 Operational and Production Limits and Work Practices

For any process emission unit located in the PM<sub>10</sub> non-attainment areas designated in 35 IAC 212.324(a), the Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.324 shall be met at all times. Proper maintenance shall include the following minimum requirements, pursuant to 35 IAC 212.324(f):

- a. Visual inspection of air pollution control equipment;
- b. Maintenance of an adequate inventory of spare parts; and
- c. Expeditious repairs, unless the emission unit is shutdown.

#### 1.5.6 Emission Limitations

The affected germ processing facility is subject to the following limitations:

Total Germ Throughput (Ton/Year)	Total Hexane Usage (Ton/Year)	Emissions			
		PM <sub>10</sub> * (Ton/Mo) (Ton/Yr)		VOM (Ton/Mo) (Ton/Yr)	
600,000	887	5.62	67.5	73.9	887

\* This total applies to PM<sub>10</sub> emissions from the following: Germ Unloading, Argo Germ Pneumatic Conveyor and Baghouse Receiver, Germ Processing -Dry Preparation, Germ Processing - Wet Preparation, Dryer/Cooler

- a. The above limitations contain revisions to previously issued Construction Permit 92070079. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from

the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, germ throughput has been increased [T1R].

- b. Compliance with the limits of this permit shall be determined based on the 12 month rolling average.
- c. The construction of the affected germ processing facility was first permitted in 1993 and based on the net decreases of VOM and PM<sub>10</sub> emissions from this project by 106 tons/year and 1.0 ton/year, respectively.

1.5.7 Testing Requirements

None

1.5.8 Monitoring Requirements

None

1.5.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected germ processing facility to demonstrate compliance with conditions of this permit:

- a. The Permittee shall maintain the following records for maintenance and repair as required by 35 IAC 212.324(g):
  - i. Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment;

- ii. The owner or operator shall document any period during which any process emission unit was in operation when the air pollution control equipment was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made;
  - iii. A written or electronic record of the inventory of all spare parts not readily available from local suppliers shall be kept and updated;
  - iv. Copies of records shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA; and
  - v. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.
- b. Germ throughput, ton/year.
  - c. Amount of hexane received and hexane losses, ton/month and ton/year.
  - d. Monthly and annual emissions of PM<sub>10</sub> and VOM and calculated in accordance with compliance procedures in Condition 1.5.12.

#### 1.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the emission limitations as follows:

If there is an exceedance of the emission limitations of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance first becomes known. The report shall include the emissions released in accordance with the

recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

#### 1.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 1.5.12 Compliance Procedures

Compliance with the particulate matter limitations in Condition 1.5.3(c) is assured and achieved by the proper operation and maintenance of the filters and scrubbers as required by this section and the work-practices inherent in operation of the affected germ processing facility.

### 1.6 Group 6: Wet Milling and Co-Products Operations

#### 1.6.1 Description

Shelled corn is soaked in steeping liquor to condition the grain for separation into its' constituents of starch, gluten, germ and fiber utilizing a wet milling process. Following the soaking process, the corn is milled and the germ is separated from the remaining ingredients via hydroclones, dewatered and dried before further processing to remove the oil from the germ. The remaining ingredients are further separated via milling, screening and centrifugation into starch, gluten and fiber.

#### 1.6.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description/Date of Construction	Emission Control Equipment
Group 6	Wet Milling and Co-Products Operations	Building 1B Corn Unloading Station, 1975	Cyclones
		Corn Truck Unloading System, 1980's	Baghouse
		Corn Storage Silos (2), 1980's	Baghouse
		Spent Flake Transport/Storage, 1980's	Baghouses
		Spent Flake Transport Blower, 1980's	Baghouses
		Corn Cleanings to Dryers and Storage Transport Systems, 1980's	Baghouses
		Co-Products Dryers and Coolers with Control System, 1980's, 1995 to 1997	Cyclones, Scrubbers, Thermal Oxidizers

Emission Unit	Equipment	Description/Date of Construction	Emission Control Equipment
		Feed Transport Blower, 1980's	Baghouse
		Gluten Cooler Draft System, 1980's	Scrubber
		Cooled Gluten Transport System, 1980's	Baghouse
		Feed Mill Dust System, 1980's	Baghouse
		Gluten Storage Dust System, 1980's	Baghouse
		Feed Storage and Loadout System, 1980's	Baghouses
		Corn Wet Milling Tanks, 1980's	None
		Gluten Filters and Vacuum Pumps, 1980's, 1995, and 1996	None
		Corn Feed Mixing Conveyors, 1980's	None
		Conveyor (11G66) and Bucket Elevator (11G69), 1995	Baghouse
		Pellet Milling and Cooling, 1980's, 1995, and 1996	Cyclones and Scrubbers
		Wet Mill Air Heater, 1990	None
		Molten Sulfur Burner and Absorption System, 1995	Absorbers
		Steep Acid Storage and Process Tanks, 1980's, 1994	Scrubbers

#### 1.6.3 Applicability Provisions and Applicable Regulations

- a. An "affected wet milling and co-products operations" for the purpose of these unit specific conditions are

equipment used for the corn milling and the germ separation from the remaining ingredients via cyclones, dewatering and drying before further processing to remove the oil from the germ.

- b. PM<sub>10</sub> emissions from this location are regulated by 35 IAC Part 212 Subpart N: "Food Manufacturing". Specifically, the following emission limits are established in 35 IAC 212.362(b)(2), (b)(3), and (b)(4) for specific emission units operated by the Permittee in the Village of Bedford Park west of Archer Avenue:

No person shall cause or allow the emission of PM<sub>10</sub>, other than that of fugitive particulate matter, into the atmosphere to exceed the following limits during any one-hour period:

34.3 mg/scm (0.015 gr/scf) for feed dryers, gluten dryers, germ dryers, and heat recovery scrubbers.

68.7 mg/scm (0.03 gr/scf) for pellet cooler systems.

45.8 mg/scm (0.02 gr/scf) for corn unloading systems, corn silo systems, spent flake storage systems, corn cleaning transport systems, feed transport cooling systems, gluten cooling systems, gluten transport systems, feed dust systems, gluten dust systems, spent flake transport systems, and pellet dust systems.

- c. The affected wet milling and co-products operations are subject to 35 IAC 212.321(b)(1), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].

- d. Emissions of sulfur dioxide shall not exceed 2000 ppm from any emission unit, pursuant to 35 IAC 214.301.

- e. The affected wet milling and co-products operations are subject to either of the following limits established by 35 IAC Part 218 Subpart G "Use of Organic Material":
  - i. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission unit if odor nuisance exists and/or applied organic materials are photochemically reactive [35 IAC 218.301].
  - ii. Emissions of organic material in excess of those established by 35 IAC 218.301 are allowable if such emissions are controlled by one of the following methods:
    - Incineration device or vapor recovery system which reduce uncontrolled organic material emissions by at least 85 percent [35 IAC 218.302].

1.6.4 Non-Applicability of Regulations of Concern

- a. The wet mill air heater as well as each gluten dryer along with a thermal oxidizer is not subject to 35 IAC 216.121, Emissions of Carbon Monoxide from Fuel Combustion Emission Units, because each such unit is not by definition a fuel combustion emission unit.
- b. The wet mill air heater as well as each gluten dryer along with a thermal oxidizer is not subject to 35 IAC 217.121, Emissions of Nitrogen Oxides from New Fuel Combustion Emission Units, because each such unit is not by definition a fuel combustion emission unit.
- c. The operations of this facility are exempted from the control requirements of 35 IAC Part 218, Subpart TT because this facility is involved in vegetable oil extraction and processing, and pursuant to 35 IAC 218.980(f) such operations are exempted from the applicability of Subpart TT.

1.6.5 Operational and Production Limits and Work Practices

- a. Each emission unit covered in this subsection shall not operate more than 744 hours per month and 8,550 hours per year, except as provided below. Pollution control devices, as well as regenerative thermal oxidizers, are not limited to 8,550 hours per year.

Specific Limits on Equipment:

Argo 2-018, Corn Truck Unloading	8,760 hrs/yr
Argo 2-019, Corn Storage Silos	8,736 hrs/yr
Argo 2-043A, Corn Wet Milling Tanks	8,760 hrs/yr
Argo 2-043L, Corn Mixing Conveyors	8,760 hrs/yr
Argo 2-047, Conveyor 11G66 and Elev.	8,736 hrs/yr
Argo 2-059, Molten Sulfur System	8,760 hrs/yr
Argo 2-059, Steep Acid & Proc Tanks	8,760 hrs/yr
A-01B-104, 1B Corn Unloading Sta.	8,736 hrs/yr

- b. The wet mill drying area shall not discharge through the secondary exhausts (the direct Stage 1/Stage 2 scrubber exhausts) without passage through the gluten dryer furnace/duct burner system, for more than 500 hours per line annually.
- c. Stage 1 scrubber or Stage 2 scrubber shall be in operation when the germ and feed dryers are operating.
- d. Natural gas shall be the only fuel fired in the gluten dryer furnace/duct burner systems.
- e. For any process emission unit located in the PM<sub>10</sub> non-attainment areas designated in 35 IAC 212.324(a), the Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.324 shall be met at all times. Proper maintenance shall include the following minimum requirements, pursuant to 35 IAC 212.324(f):
  - i. Visual inspection of air pollution control equipment;
  - ii. Maintenance of an adequate inventory of spare parts; and
  - iii. Expeditious repairs, unless the emission unit is shutdown.

1.6.6 Emission Limitations

See Section 10.1, Attachment 1 for unit specific emission limits.

1.6.7 Testing Requirements

- a. Upon the Illinois EPA request the emissions shall be measured as follows, by an approved testing service

during conditions that are representative of maximum operation and emissions:

If the wet mill drying area discharges through a secondary exhaust on a line for 300 hours or more in a year or for 100 hours or more in a calendar year with only a single scrubber in operation, the PM<sub>10</sub> and SO<sub>2</sub> emissions of the secondary exhaust shall be measured for the PM<sub>10</sub> and SO<sub>2</sub> present in the duct work shall be measured at a point following the Stage 1/Stage 2 scrubbers but prior to the furnace/duct burner system. These measurements shall be conducted within one year.

- b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA: Refer to 40 CFR 60, Appendix A for USEPA test methods.

Location and Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Particulate Matter	USEPA Method 5
Sulfur Dioxide	USEPA Method 6

#### 1.6.8 Monitoring Requirements

- a. Continuous monitoring system shall be installed, operated, calibrated and maintained for the scrubbers on the dryer systems to verify proper operation of the scrubber, pursuant to 35 Ill. Adm. Code 201.181. The monitoring shall include the scrubbant temperature and flow rate of the scrubbant fluid.
- b. A continuous monitor shall be installed, operated and maintained for temperature above 120°F to identify flow through the secondary exhausts of the wet mill drying area.
- c. The regenerative thermal oxidizers shall be equipped with continuous temperature monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications all times the regenerative thermal oxidizer is in use.
- d. The regenerative thermal oxidizers shall be equipped with a continuous recorder for the temperature monitoring device(s), such as a strip chart recorder or computer, for measuring combustion chamber temperature of the regenerative thermal oxidizers.

1.6.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected gas-fired dryers/coolers to demonstrate compliance with conditions of this permit, pursuant to Section 39.5(7) (b) of the Act:

- a. The Permittee shall maintain the following records for maintenance and repair as required by 35 IAC 212.324(g):
  - i. Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment;
  - ii. The owner or operator shall document any period during which any process emission unit was in operation when the air pollution control equipment was not in operation, or was malfunctioning, so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made;
  - iii. A written or electronic record of the inventory of all spare parts not readily available from local suppliers shall be kept and updated;
  - iv. Copies of records shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA; and
  - v. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.

- b. Hours of operation of the expanded facility and/or individual emission units.
- c. Fuel usage for the gluten dryer furnace/duct burner system on a monthly and annual basis.
- d. The pressure drop across dry collection systems (excluding cyclones) and the scrubbant flow for wet collection systems to show compliance with the particulate matter emissions.
- e. The Permittee shall maintain detailed records for the secondary exhausts of the wet mill drying area and the Stage 1 and Stage 2 scrubbers, including, date and time of discharges based on the monitoring requirements, with operating status of individual scrubbers; duration of discharge, and for any discharge exceeding one hour the reason for discharge and scrubber outage (if any) and other relevant information to enable the discharge to be evaluated.
- f. Emissions of regulated air pollutants to enable verifying compliance with the limits established in Section 10.1, Attachment 1.

#### 1.6.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the emission limitations as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

If there is an exceedance of the emission limitations of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

#### 1.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 1.6.12 Compliance Procedures

- a. Compliance with the particulate matter limitations in this section is assured and achieved by the proper operation and maintenance of the filters and wet

scrubbers as required by this section and the work-practices inherent in operation of the affected wet milling and co-products operations.

- b. To calculate emissions of PM<sub>10</sub> the following equation shall be used:

$$\text{PM Emissions}^* = (\text{Air flow, cfm}) \times (\text{Estimated Dust Loading, gr/scf}) \times (1 \text{ lb}/7,000 \text{ gr}) \times (60 \text{ minutes/hr}) \times [1 - (\text{Control Device Efficiency (\%)} / 100)].$$

- \* As specified by the manufacturer or vendor of the filter, or air testing of the actual equipment, or testing of similar equipment at this or other facilities, or based on vendor or manufacturer outlet concentration guarantees or predicted outlet emission performance, or based on the standard EPA emission factors such as AP-42. If compliance testing has been conducted to determine mass emission rates, then the test data may be used in lieu of the above. Vendor outlet concentration guarantees and predicted performance, or experience with similar equipment, may be used in place the equation above.

#### 1.7 Group 7: Storage Tanks

Internal Floating Roof Storage Tanks - Subject to 40 CFR 60 Subpart Kb [Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984]

##### 1.7.1 Description

The Permittee operates new internal floating roof storage tank(s) to store ethanol. Permanent submerged loading must be used at these tanks, minimizing turbulence and evaporation of VOM during loading.

##### 1.7.2 List of Emission Equipment and Pollution Control Equipment

Storage Tank	Description	Emission Control Equipment
T01	New Internal Floating Roof Tank (200 Proof Day Tank) Capacity: 80,000 Gallon	Permanent Submerged Loading Pipe and Internal Floating Roof with Primary and Secondary Seals

Storage Tank	Description	Emission Control Equipment
T02	New Internal Floating Roof Tank (190 Proof Ethanol Storage) Capacity: 90,000 Gallon	Permanent Submerged Loading Pipe and Internal Floating Roof with Primary and Secondary Seals
T03	New Internal Floating Roof Tank (Off Spec. Product Storage Tank) Capacity: 80,000 Gallon	Permanent Submerged Loading Pipe and Internal Floating Roof with Primary and Secondary Seals
T04	New Internal Floating Roof Tank (Denaturant Tank) Capacity: 40,000 Gallon	Permanent Submerged Loading Pipe and Internal Floating Roof with Primary and Secondary Seals
T05	New Internal Floating Roof Tank (Finished Product Storage Tank) Capacity: 650,000 Gallon	Permanent Submerged Loading Pipe and Internal Floating Roof with Primary and Secondary Seals

### 1.7.3 Applicability Provisions

- a. An "affected tank," for the purposes of these unit specific conditions is a storage tank that is subject to the control requirement of 40 CFR 60 Subpart Kb and 35 IAC 218.122(b) that relies on an internal floating roof and a permanent submerged loading pipe for compliance, respectively. A storage tank constructed, reconstructed, or modified after July 23, 1984 is subject to the control requirements of 40 CFR 60 Subpart Kb if it a design capacity greater than or equal to 151 m<sup>3</sup> (approx. 39,890 gal) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa (0.754 psia) but less than 76.6 kPa (11.1 psia) or with a design capacity greater than or equal to 75 m<sup>3</sup> (19,813 gal) but less than 151 m<sup>3</sup> (39,890 gal) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa (4.00 psia) but less than 76.6 kPa (11.1 psia).
- b. Unless exempted pursuant to 35 IAC 215.122(c), an affected storage tank is subject to the control requirements of 35 IAC 215.122 with a storage capacity of greater than 250 gal is required to be equipped with a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA. The Illinois EPA has not approved any alternative

control. [Submerged Loading Pipe - 35 IAC 215.122(b)]

- c. Each storage tank subject to 40 CFR 60 Subpart Kb is hereby shielded from compliance with 35 IAC 215.120, 215.127, 215.128, and 215.129. This shield is issued to streamline the applicable requirements for the source, based on the Illinois EPA's finding that compliance with 40 CFR 60, Subpart Kb assures compliance with 35 IAC 215.120, 215.127, 215.128, and 215.129, following the review requirements of 40 CFR 60 Subpart Kb and 35 IAC 215.120, 215.127, 215.128, and 215.129.

#### 1.7.4 Non-Applicable Regulations

- a. Each affected storage tank is not subject to the requirements of 40 CFR 60 Subpart K or Ka because the tanks were constructed prior to the date that the NSPS became applicable.
- b. An affected tank is not subject to the limitations of 35 IAC 215.121 - Storage Containers of VPL and 35 IAC 218.123 - Petroleum Liquid Storage Tanks, because the tanks are used solely for the storage of VOLs not defined as petroleum liquids (See Condition 1.7.7(a)). [35 IAC 215.121 and 215.123]

#### 1.7.5 Control Requirements

- a. Each affected tank shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof [40 CFR 60.112b(a)(1)(ii)]:
  - i. A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.
  - ii. Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.
  - iii. A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against

the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

- b. Each affected tank shall also be equipped with a permanent submerged loading pipe. [35 IAC 218.122(b)]

1.7.6 Emission Limitations

- a. In addition to the source wide emission limitations in Condition 2, the affected emission units are subject to the following:

Emissions from the affected storage tanks shall not exceed the following limits:

VOM Emissions	
<u>(Ton/Month)</u>	<u>(Ton/Year)</u>
0.04	0.44

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the previous emissions limitations on Storage Tank 25-6, as established in Permit 94060031, and Storage Tank 0-3-10, as established in Permit 91100027, i.e., the previous limit of 0.44 and 0.16 ton/year, respectively, has been revised based upon the latest USEPA calculation procedures (TANKS

program) and the maximum VOL throughputs indicated in the CAAPP application. [T1R].

- b. There are also source wide limitations in Condition 5.5 that include this unit.

#### 1.7.7 Operating Requirements

- a. Each affected tank is limited to the storage of ethanol or denaturant.
- b. Each affected tank shall be operated in compliance with the operating requirements of 40 CFR 60.112b(a)(1) and 60.113b(a), as follows:
  - i. The internal floating roof shall float on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of emptying or refilling shall be continuous and shall be accomplished as rapidly as possible [40 CFR 60.112b(a)(1)(i)]
  - ii. Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents shall provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]
  - iii. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid which is maintained in a closed position at all times (i.e., no visible gaps) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]
  - iv. Automatic bleeder vents shall be equipped with a gasket and be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]
  - v. Rim space vents shall be equipped with a gasket and be set to open only when the

internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a) (1) (vi)]

- vi. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a) (1) (vii)]
- vii. Each penetration of the internal floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a) (1) (viii)]
- viii. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a) (1) (ix)]
- ix. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the floating roof is not resting on the surface of the VOL, there is liquid accumulated on the roof, the seal is detached, or there are holes or tears in the seal fabric. These actions shall be completed within 45 days of the inspection unless an extension is granted. [40 CFR 60.113b(a) (2) and (a) (3) (ii)]
- x. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal has holes, tears or other openings in the seal or seal fabric, or the gaskets no longer close off. [40 CFR 60.113b(a) (3) (ii) and (a) (4)]

#### 1.7.8 Inspection Requirements

The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 60.113b(a) for each affected tank equipped with an internal floating roof as follows:

- a. Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with

VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel. [40 CFR 60.113b(a) (1)]

- b. For affected storage tanks equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Illinois EPA in the inspection report required in Condition 1.7.10(a) (i) (40 CFR 60.115b(a) (3)). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. . [40 CFR 60.113b(a) (2)]
- c. For vessels equipped with both primary and secondary seals, the Permittee shall visually inspect the affected storage tanks as follows: [40 CFR 60.113b(a) (3)]
  - i. Visually inspect the vessel as specified in Condition 1.7.8(d) at least every 5 years; or
  - ii. Visually inspect the vessel as specified in Condition 1.7.8(b) at least once every 12 months.
- d. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or

the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in Conditions 1.7.8(b) and (c)(ii) and at intervals no greater than 5 years in the case of vessels specified in Condition 1.7.8(c)(i). [40 CFR 60.113b(a)(4)]

Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 1.7.10(b).

1.7.9 Recordkeeping Requirements

- a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 60.115b for each affected tank pursuant to 40 CFR 60.115b(a), as follows:

Keep a record of each inspection performed as required by Condition 1.7.8. [40 CFR 60.115b(a)(2)]

- i. The date the inspection was performed;
  - ii. Who performed the inspection;
  - iii. The method of inspection;
  - iv. The observed condition of each feature of the internal floating roof (seals, roof decks and fittings), with the raw data recorded during the inspection; and
  - v. Summary of compliance.
- b. The Permittee shall maintain records of the following for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 1.7.8(d):

Records that are sufficient to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect.

- c. The Permittee shall keep the operating records required by 40 CFR 60.116b for each affected tank, as follows:

Records of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

- d. The Permittee shall maintain records of the VOM emissions from each affected storage tank in accordance with the procedures outlined in Condition 1.7.12, so as to demonstrate compliance with the emission limitations of Condition 1.7.6.
- e. Monthly records of VOM emissions attributable to the affected storage tanks, with calculations; tons/month and ton/year. Annual emissions shall be determined each month based upon emissions for the month record plus the emissions of the 11 previous months.

#### 1.7.10 Reporting Requirements

- a. The Permittee shall submit written notifications and reports to the Illinois EPA, Compliance Section as required by the NSPS, for each affected tank, as follows:
  - i. If any of the conditions described in Condition 1.7.8(b) are detected during the annual visual inspection required in Condition 1.7.8(b), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]
  - ii. After each inspection required in Condition 1.7.8(c) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in Condition 1.7.8(c)(ii), a report shall be furnished to the Illinois EPA within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of Conditions 1.7.5(a), 1.7.7(b) or 1.7.8(c) and list each repair made. [40 CFR 60.113b(a)(5)]

- b. The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the control and operating requirements as follows:
  - i. Any storage of VOL in an affected tank that is not in compliance with the control requirements due to absence of the features required by Condition 1.7.5, e.g., no "secondary seal," within five days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps taken to avoid future non-compliance.
  - ii. Any storage of VOL in an affected tank that is out of compliance with the control requirements (Condition 1.7.5) due to damage, deterioration, or other condition of the tank, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.
  - iii. Any exceedance of the emission and operational limits shown in Conditions 1.7.6(a) and 1.7.7(a), respectively.

1.7.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected tank without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

- a. Changes in the material stored in a tank, provided the tank continues to comply with the Conditions in Section 1.7 of this permit.
- b. Changes in seal type and configuration, made during the course of normal repair and maintenance of an affected storage tank's floating roof, provided the tank continues to comply with the Conditions in Section 1.7 of this permit.

#### 1.7.12 Compliance Procedures

- a. Emissions from each affected storage tank shall be determined through the use version 4.1 of the TANKS program.
- b. For the purpose of estimating HAP emissions from equipment at the source, the vapor wt percent (based on the 1992 USEPA survey, data developed by the Permittee or calculations based upon the applicable MSDS for the specific VOL) of each HAP for each product times the VOM emissions contributed by that product is acceptable

### 1.8 Group 8: Fugitive Emissions

#### 1.8.1 Description

Fugitive emissions at this source are from operations and emission units listed below.

#### 1.8.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Group 8	Process Spills and General Equipment Leaks	----
	Railcar Losses	----
	Bottom Ash Slurry Handling	
	Coal Crushing	
	Paved and Unpaved Plant Roads	
	Cooling Towers, Particulate Emissions	
	Occasional Bulk Unloading, Bag and Other Container Handling	
	Starch Reprocessing Loadout	

#### 1.8.3 Applicability Provisions and Applicable Regulations

- a. The "affected fugitives emissions" for the purpose of these unit-specific conditions, are the fugitives described in Conditions 1.8.1 and 1.8.2.
- b. The affected fugitives are subject to the emission limits identified in Condition 5.2.2 and the following limits and requirements established in 35 IAC 212.316:

- i. Emission Limitation for Crushing and Screening Operations. No person shall cause or allow fugitive particulate matter emissions generated by the crushing or screening of slag, stone, coke or coal to exceed an opacity of 10 percent.
- ii. Emission Limitations for Roadways or Parking Areas. No person shall cause or allow fugitive particulate matter emissions from any roadway or parking area to exceed an opacity of 10 percent, except that the opacity shall not exceed 5 percent at quarries with a capacity to produce more than 1 million ton/yr of aggregate.
- iii. Emission Limitations for Storage Piles. No person shall cause or allow fugitive particulate matter emissions from any storage pile to exceed an opacity of 10 percent, to be measured four ft from the pile surface.
- iv. Emission Limitation for All Other Emission Units. Unless an emission unit has been assigned a particulate matter,  $PM_{10}$ , or fugitive particulate matter emissions limitation elsewhere in 35 IAC 212.316 or in 35 IAC Part 212 Subparts R or S, no person shall cause or allow fugitive particulate matter emissions from any emission unit to exceed an opacity of 20 percent.

1.8.4 Non-Applicability of Regulations of Concern

N/A

**1.8.5 Operational and Production Limits and Work Practices**

N/A

1.8.6 Emission Limitations

None

1.8.7 Testing Requirements

None

1.8.8 Monitoring Requirement

None

#### 1.8.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected fugitives to demonstrate compliance with 1.8.3:

- a. The owner or operator of any fugitive particulate matter emission unit subject to 35 IAC 212.316 shall keep written records of the application of control measures as may be needed for compliance with the opacity limitations and shall submit to the Illinois EPA an annual report containing a summary of such information.
- b. The records required under this subsection shall include at least the following:
  - i. The name and address of the source;
  - ii. The name and address of the owner and/or operator of the source;
  - iii. A map or diagram showing the location of all emission units controlled, including the location, identification, length, and width of roadways;
  - iv. For each application of water or chemical solution to roadways by truck: the name and location of the roadway controlled, application rate of each truck, frequency of each application, width of each application, identification of each truck used, total quantity of water or chemical used for each application and, for each application of chemical solution, the concentration and identity of the chemical;
  - v. For application of physical or chemical control agents: the name of the agent, application rate and frequency, and total quantity of agent and, if diluted, percent of concentration, used each day; and
  - vi. A log recording incidents when control measures were not used and a statement of explanation.

#### 1.8.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance of the affected

fugitives with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

- a. Copies of all records required by this Section shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA and shall be transmitted to the Illinois EPA by a company-designated person with authority to release such records.
- b. A quarterly report shall be submitted to the Illinois EPA stating the following: the dates any necessary control measures were not implemented, a listing of those control measures, the reasons that the control measures were not implemented, and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not applied based on a belief that application of such control measures would have been unreasonable given prevailing atmospheric conditions, which shall constitute a defense to the requirements of this Section. This report shall be submitted to the Illinois EPA thirty (30) calendar days from the end of a quarter. Quarters end March 31, June 30, September 30, and December 31 [35 IAC 212.316(g)].

1.8.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.8.12 Compliance Procedures

Compliance with the emission limits in Condition 1.8.3 is assured and achieved by the proper operation and maintenance of the equipment as required by this section and the work-practices inherent in operation of the affected units.

1.9 Group 9: Truck Loading Rack  
Control: Vapor Combustion Unit

1.9.1 Description

The truck loading/unloading rack is used to load and unload various petroleum products. The Permittee operates a loading rack that consists of three bays that include a total of three loading points. The VOM emissions from the truck loading/unloading rack occur when material is loaded into delivery vehicles. The VOM emissions from unloading material are accounted for in the working losses of the

storage tanks that the material is loaded into, with the exception of fugitive emissions that are attributed to the components, i.e., valves, flanges, etc., associated with the truck loading stations.

#### 1.9.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Loading/ Unloading Rack	Three Bay Loading Rack Used for Loading Various Petroleum Products Into Tank Trucks	None

#### 1.9.3 Applicability Provisions and Applicable Regulations

An "affected loading rack," for the purpose of these unit-specific conditions, is a loading rack used to transfer organic materials into a tank truck or trailer, subject to the requirements of 35 IAC 215.122(a) and relies on the use submerged loading pipes for compliance.

An "affected loading rack," for the purpose of these unit-specific conditions, is a loading rack that is subject to the requirements of 35 IAC 215.582. A "gasoline tank truck" is a delivery tank truck used at bulk gasoline terminals which is loading gasoline or has loaded gasoline on the immediately previous load. Each loading rack used to transfer gasoline into a delivery vessel (gasoline tank truck) from any bulk gasoline terminal is subject to the requirements of 35 IAC 218.582.

#### 1.9.4 Non-Applicability of Regulations of Concern

- a. The affected loading rack was constructed in 1960 and modified in 1975 and hence will not be subject to the requirements of 40 CFR 60 Subpart XX because it was not constructed or modified after December 17, 1980, pursuant to the NSPS for Bulk Gasoline Terminals.
- b. The affected railroad tank truck and trailer loading racks are not be subject to 35 IAC Part 218, Subpart TT, because they are subject to 35 IAC 218, Subpart Y [35 IAC 218.980(a) and (b)]

#### 1.9.5 Control Requirements and Operational Limitations

- a. The total organic compound emissions from the affected loading rack and associated combustion unit shall not exceed 35 milligrams per liter of material loaded, pursuant to Sections 9.1(d) and 39 of the Act, so that the operation of this loading rack and vapor collection/recovery unit is not a major source

for HAP subject to 40 CFR 63, Subpart R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations).

This condition supercedes 35 IAC 218.582(a)(1) which requires that each affected loading rack be equipped and operated with a vapor control system that limits emissions of VOM to not more than 80 milligrams per liter (0.00067 lb/gal) of gasoline loaded from tank trucks during product loading.

- b. The Permittee shall not cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading into any tank truck or trailer unless such loading area is equipped with submerged loading pipes or a device that is equally effective in controlling emissions and is approved by the Illinois EPA according to the provisions of 35 IAC 201, and further processed consistent with 35 IAC 218.108. At the time of issuance of this permit, the Illinois EPA has not approved any alternative to the submerged loading pipes. [35 IAC 218.122(a)]

c.	Gasoline Throughput	
	<u>(Gal/Month)</u>	<u>(Gal/Year)</u>
	25,000,000	250,000,000

These limits are being established, pursuant to the request of the Permittee, so that the operation of this loading rack and vapor collection/combustion unit is not a major source for HAP subject to 40 CFR 63, Subpart R, National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations).

#### 1.9.6 Emission Limitations

The affected emission units are subject to the following:

N/A

#### 1.9.7 Operating Requirements

- a. The vapor control system shall be operated at all times during the loading of organic liquids and all vapors displaced in the loading of organic liquids are to be vented only to the vapor control system.

This limitation is imposed based upon representations made in the applications.

- b. At all times during the loading of gasoline into any delivery vessel, the vapor control system shall operate and all vapors displaced in the loading of gasoline are to be vented only to the vapor control system. [35 IAC 218.582(a)(2)]
- c. There shall be no liquid drainage from the loading device of an affected loading rack when it is not in use. [35 IAC 218.582(a)(3)]
- d. The Permittee shall provide a pressure tap or equivalent on the vapor collection system associated with an affected loading rack. The vapor collection system and the gasoline loading equipment shall be operated in such a manner that it prevents avoidable leaks of liquid during loading or unloading operations and prevents the gauge pressure from exceeding 18 inches of water and the vacuum from exceeding 6 inches of water and to be measured as close as possible to the vapor hose connection. [35 IAC 218.582(b)(2), 218.582(b)(1)(A) and (C)]
- e. A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B, incorporated by reference in 35 IAC 218.112. [35 IAC 218.582(b)(1)(B)]
- f. All loading and vapor return lines shall be equipped with fittings that are vapor tight. [35 IAC 218.582(a)(4)]
- g. No person shall cause or allow the transfer of gasoline into a delivery vessel from an affected loading rack unless the delivery vessel displays the appropriate sticker pursuant to 35 IAC 218.584(b) or (d) or the delivery vessel has provided a current certification as required by 35 IAC 218.584(c)(3), and the delivery vessel meets the following requirements [35 IAC 218.582(a)(5)]:
  - i. Includes a vapor space connection that is equipped with fittings that are vapor tight;
  - ii. Has its hatches closed at all times during loading or unloading operations, unless a top loading vapor recovery system is used;

- iii. Does not internally exceed a gauge pressure of 18 inches of water or a vacuum of 6 inches of water;
- iv. Is designed and maintained to be vapor tight at all times during normal operations;
- v. Are tested annually in accordance with Method 27, 40 CFR 60, Appendix A. Each vessel must be repaired and retested within 15 business days after discovery of the leak by the owner, operator, or the Illinois EPA, when it fails to sustain:
  - A. A pressure drop of no more than three inches of water in five minutes; and
  - B. A vacuum drop of no more than three inches of water in five minutes.

#### 1.9.8 Inspection and Monitoring Requirements

- a. A pilot flame shall be present at all times when loading occurs during operation of the VCU and portable flare unit. The pilot flame shall be monitored using a thermocouple or equivalent device to detect the presence of a flame. An affected loading rack must be shut down and not allow loading if a pilot flame is not detected in the associated vapor collection/combustion system.
- b. The VCU or portable flare unit shall be equipped with continuous temperature indicator and strip chart recorder or disk storage for the vapor control combustion system temperature. [35 IAC 218.105(d) (2) (A) (i)]

#### 1.9.9 Recordkeeping Requirements

- a. General Recordkeeping

The Permittee shall maintain records of the following for each affected loading rack to demonstrate compliance with Conditions 1.9.5(c), and 1.9.6(a) and (b):

- i. The identification and properties of each organic liquid distributed through each affected loading rack, as related to emissions, i.e., storage temperature, vapor pressure and molecular weight;

- ii. The amount of each organic liquid distributed through each affected loading rack (including MTBE-based gasoline), gal/month, and gal/year, with annual records updated each month by totaling the throughput for that month plus the preceding 11 months;
- iii. Total annual emissions of VOM and HAP from the each affected loading rack calculated by totaling the applicable emissions for the previous 12 months, tons/year, with supporting calculations. Emissions shall be calculated utilizing an approved USEPA methodology, such as Section 5.2 of the AP-42 and the control efficiency of a VCU as demonstrated in the most recent test (See Condition 1.9.12), with annual records updated each month by totaling the throughput for that month plus the preceding 11 months; and

b. Records of Operations

The Permittee shall maintain records of the following for the affected loading rack and associated combustion unit to demonstrate compliance with Conditions 1.9.5 and 1.9.7:

- i. The use of an affected loading rack for loading of any gasoline tank truck when there was no pilot flame present in the associated VCU or portable flare unit, including:
  - A. The date and time of the loading;
  - B. The specific problem with the VCU, portable flare unit, or flame monitor;
  - C. Type of material loaded; and
  - D. The reason that loading occurred even though the VCU or portable flare unit did not have a pilot flame.
- ii. The use of an affected loading rack for the loading of any nonvapor-tight gasoline tank (one not meeting the requirements of Condition 1.9.7) or a delivery vessel that does not display the appropriate sticker or has not provided a current certification (one not meeting the requirements of Condition 1.9.7), including:

- A. The date and time of the loading;
  - B. The specific reason the vessel did not meet the requirements of Condition 1.9.7;
  - C. Type of material loaded; and
  - D. The reason why loading was allowed.
- iii. Implementation of the alternative vapor control scenarios (See Condition 1.9.11), including:
  - A. Identification of the scenario implemented;
  - B. The reason why the primary vapor control system (e.g., VCU) was shutdown; and
  - C. The date and time that the alternative operating scenario was implemented.
- c. Inspection Requirements

The Permittee shall keep the following records for each affected loading rack and associated vapor collection/combustion system which delivers liquid product into gasoline tank trucks.

A record of each leak inspection (Condition 1.9.8) shall be kept on file at the terminal. Inspection records shall include, as a minimum, the following information:

  - i. Date of inspection;
  - ii. Findings (may indicate no leaks discovered; or location, nature, and severity of each leak);
  - iii. Leak determination method;
  - iv. Corrective action, including the date each leak was repaired and the reasons for any repair interval in excess of 15 days; and
  - v. Name and signature of the person that performed the inspection.
- d. Gasoline Tank Truck Records

The Permittee shall keep the following records for the gasoline tank trucks loaded at this terminal:

- i. The tank truck vapor tightness documentation and/or certification required under 35 IAC 215.584(c)(3) (Condition 1.9.7); and
- ii. The documentation file for each gasoline tank truck shall be updated at least once per year to reflect current test results as determined by Method 27. This documentation shall include as a minimum, the following information:
  - A. Test title: Gasoline Deliver Tank Pressure Test - EPA Reference Method 27;
  - B. Owner name and address;
  - C. Tank identification number;
  - D. Testing location;
  - E. Date of test;
  - F. Tester name and signature;
  - G. Witnessing inspector, if any: name, signature, and affiliation; and
  - H. Test results: Actual pressure change in 5 minutes, mm of water (average 2 runs).

#### 1.9.10 Reporting Requirements

##### a. Annual Report

The Permittee shall provide an annual report, to be submitted with the source's annual emission report, which includes the following:

- i. The monthly and annual throughputs for each affected loading rack for each month of the previous calendar year sufficient to demonstrate compliance with the 12 month running total of Condition 1.9.5(c), gallons/month and gallons/year (e.g., for the annual totals, for the month of January, the throughput from February of the preceding year through January, for the month of February, the throughput from March of the preceding calendar year through February, 12 months in all);

- ii. The monthly and annual emissions of HAP attributable to the loading of petroleum products for each affected loading rack for each month of the previous calendar year sufficient to demonstrate compliance with the 12 month running total of HAPs, tons/month and tons/year (e.g., for the annual totals, for the month of January, the emissions from February of the preceding year through January, for the month of February, the emissions from March of the preceding calendar year through February, 12 months in all); and
  - iii. Summarization of any use of an affected loading rack to load delivery vessels (gasoline tank trucks) into trucks that did not meet the requirements of Conditions 1.9.7, including:
    - A. The date and time of the loading;
    - B. The specific reason the vessel did not meet the requirements of Condition 1.9.7;
    - C. Type of material loaded; and
    - D. The reason why loading was allowed.
- b. Semi-Annual Reports

Pursuant to Section 39.5(7)(f)(i) of the Act, the Permittee shall submit a semi-annual report for any monitoring that is required. These reports shall be submitted by the end of January and July of each year and shall include the following information for the preceding 6 month period:

- i. Summary of any use of an affected loading rack when there was no pilot flame present in the associated VCU, or the VCU was not operating at the appropriate temperature, including:
  - A. Date and time of occurrence;
  - B. Specific problem associated with the VCU or flame monitor;
  - C. Type of material being loaded; and
  - D. Reason why loading continued.

- ii. Summary of all times when the pilot flame was not detected or the vapor block valve failed to open including:
  - A. Date and time of occurrence;
  - B. Specific problem, i.e., the pilot flame was out or a malfunction of the flame monitoring equipment; and
  - C. Supporting data, i.e., strip chart or disk.
- iii. Summary of times when the continuous temperature indicator and/or strip chart recorder or disk storage was not functioning, including:
  - A. Date and time of occurrence; and
  - B. Specific problem associated with the indicator or recording equipment.
- c. Reporting of Non-compliance

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the emission limits as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

Notification within 15 days of operation of the affected loading rack and/or associated vapor recovery unit in excess of the limitations of Condition 1.9.5(c).
- d. Reporting of Malfunction or Breakdown

The Permittee shall promptly notify the Illinois EPA, Maywood Regional Office on the same or next working day of any malfunction or breakdown of any VCU or vapor recovery unit, documenting the time of occurrence and type of malfunction or breakdown. The Permittee shall also submit a quarterly report summarizing the quantity of emissions, the type and duration of each malfunction and the steps taken to reduce the occurrence of each malfunction or breakdown.

#### 1.9.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected loading

rack without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

During such time that a malfunction or breakdown occurs on the VCU, one of the following operating alternatives is allowed:

- a. The portable flare unit; or
- b. The ducting of vapors to the VCU located at the neighboring Citgo Petroleum Corporation facility (ID 031804AAM).

The portable flare unit shall be operated according to the procedures referenced in 40 CFR 60.18(b) through (f).

#### 1.9.12 Compliance Procedures

- a. Compliance with the operational limitations of Condition 1.9.5(c), and the operating requirements of Condition 1.9.7 shall be demonstrated through the inspection/monitoring, recordkeeping and reporting requirements of Conditions 1.9.8, 1.9.9, and 1.9.10.
- b. Compliance with the control requirements of 1.9.5(a) and (b) shall be demonstrated by the inspection/monitoring, recordkeeping and reporting requirements of Conditions 1.9.8, 1.9.9, and 1.9.10 and the fact that compliance of the affected loading rack and associated vapor combustion unit have previously been demonstrated by fulfillment of the test requirements of 40 CFR 60.8 by measurement of the total organic concentration(s) in the effluent stream of the vapor combustion system.
- c. Monthly VOM emissions from the loading rack shall be determined by use of the following equation:

- i. Loading Emissions

$$\text{Loading Emissions (lb/month)} = CE \times \sum_{i=1} LL_i \times V_i$$

Where:

$LL_i$  = Calculated loading loss emissions factors (lb/1000 gallon) for

gasoline, distillates, denatured ethanol, interface/transmix, etc.

$V_I$  = Throughput of gasoline, distillates, denatured ethanol, interface/transmix, etc. (gallon/year)

$CE$  =  $0.24844 = [0.013 + 0.987 \times 0.012]$

Where:

The values of 0.013 and 0.987 in the equation above represent the amount of one unit of emissions that are uncaptured and captured, respectively. Also, the value of 0.012 in the equation represents the amount of one unit of captured VOM emissions that left the control device uncontrolled.

$LL_i$  is the uncontrolled loading loss emissions factors for gasoline, distillates, and denatured ethanol, based on the AP-42 equation for loading of tank trucks (Section 5.2).

$LL_g$  = 6.187 lb/1000 gallons of gasoline loaded

$LL_e$  = 0.563 lb/1000 gallons of denatured ethanol loaded (based on the calculation method shown below)

$LL_{F1}$  = 0.019 lb/1000 gallons of Fuel Oil No. 1 loaded (based on the calculation method shown below)

$LL_{F2}$  = 0.014 lb/1000 gal of Fuel Oil No. 2 (based on the calculation method shown below)

All other loading factors shall be determined, based on the AP-42 equation for loading of tank trucks, as follows:

$$LL_i = 12.46 \times [S_i \times P_i \times M_i/T_i]$$

Where:

$LL_i$  = Loading losses, in lbs/1000 gal

$S_i$  = Saturation factor (unitless)

$P_i$  = True vapor pressure, in psia

$M_i$  = Molecular weight of vapors, in lb/lb-mole

$T_i$  = Temperature of bulk liquid loaded, in degrees Rankine

- ii. Fugitive Truck emissions shall be calculated based upon the following:

Fugitive Truck Emissions = (Gasoline + Ethanol Throughput (gallons/month)) x 0.0751 lb/1000 gal

- iii. Total Emissions = Loading Emissions + Fugitive Truck Emissions

- d. HAP emissions from the loading rack shall be determined by speciating the individual HAP emissions as a percentage of the gasoline and denatured ethanol throughputs (e.g., hexane represents 1.4% by weight of the VOM in gasoline) and calculating individual HAP emissions as in (c) above. Total HAP emissions will be based on the sum of the emissions for each individual HAP.

- e.  $\text{NO}_x$  emissions shall be calculated through use of the following equation:

$\text{NO}_x$  Emissions = Throughput (in 1000 g) x 0.0155 lb/gal

1.10 Group 10: Fugitives from Leaking Components  
Control: None

1.10.1 Description

Fugitive emissions from equipment components, those not included in the loading rack emissions, such as valves, flanges,...etc., are generated during the processing of material through the piping distributed throughout the source.

1.10.2 List of Emission Equipment and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Equipment Components (Valves, Flanges, Pump Seals, Etc.)	Processing of Material Throughout the Source's Piping System	Work Practices and Equipment Replacement

1.10.3 Applicability Provisions

There are no general rules or regulations that address the operation of these emission units located at a petroleum bulk terminal. However, pursuant to 35 IAC 218.142, no person shall cause or allow the discharge of more than 32.8 ml (2 cu in) of VOL with vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F) into the atmosphere from any pump or compressor in any 15 minute period at standard conditions. Note that pursuant to Condition 5.10, the source is shielded from determining compliance with 35 IAC 218.142.

1.10.4 Non-Applicable Regulations

None

1.10.5 Control Requirements

None

1.10.6 Emission Limitations

There are no specific emission limitations for this unit, however, there are source wide limitations in Condition 5.5 that include the emissions from applicable units.

1.10.7 Operating Requirements

The Permittee shall repair any component from which a leak of VOL is detected or observed. The repair shall be completed as soon as practicable but no later than 15 days after the leak is found. If the leaking component cannot be repaired until the process unit is shut down, the leaking component must then be repaired before the unit is restarted.

1.10.8 Inspection Requirements

The Permittee shall visually inspect for leaks from all affected equipment components on a monthly basis.

1.10.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the piping components at the source to demonstrate compliance with Condition 1.10.4 pursuant to Section 39.5(7)(b) of the Act.

- a. The number of components (i.e., valves, pump seals, etc.) in light liquid, heavy liquid or vapor service, as applicable

- b. Emissions of VOM attributable to fugitive losses (valves, pump seals, etc.), tons/year, with supporting calculations, calculated utilizing the compliance procedures in Condition 1.10.12 or other approved USEPA methodology;

#### 1.10.10 Reporting Requirements

None

#### 1.10.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to these units without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

None

#### 1.10.12 Compliance Procedures

- a. Compliance with the fugitive VOM emission limitations of Condition 1.8 and pursuant to the overall VOM emissions limitation of Condition 5.5 shall be demonstrated through the calculation of the following equation:

$$\text{Total Fugitive VOM Emissions (lb/hr)} = \sum_{i=1} EF_i \times N_i$$

Where:

$EF_i$  = The specific component's (i.e., valves, pump seals, etc.) emission factor listed below.

	EF
Component	Lb/Component-Hour
Connectors and Flanges	$2.30 \times 10^{-5}$
Valves	$1.50 \times 10^{-4}$
Loading Arms	$8.70 \times 10^{-4}$
Pumps	$9.30 \times 10^{-3}$
Other <sup>a</sup>	$2.50 \times 10^{-4}$

Emission factors found in API Publication No. 4588, "Development of Fugitive

Emission Factors and Emission Profiles  
for Petroleum Marketing Terminals,  
Vol. 1, 1993",

<sup>a</sup> Other means any components other than  
flanges, valves, open-ended lines, and  
pump seals

$N_i$  = Number of specific components (i.e.,  
valves, pump seals, etc.) in light  
liquid, heavy liquid or gas service as  
recorded in the records required in  
Condition 1.10.9.

Total annual emissions, in tons/year, shall be  
calculated by multiplying the hourly emission by 8760  
hr/year.

- b. Fugitive HAP emissions from equipment components,  
other than those included in the loading rack  
emissions, shall be determined by speciating the  
individual HAP emissions as a percentage of the  
gasoline and denatured ethanol throughputs (e.g.,  
hexane represents 1.4% by weight of the VOM in  
gasoline) and calculating individual HAP emissions as  
in (c) above. Total fugitive HAP emissions will be  
based on the sum of the emissions for each individual  
HAP.

If you have any questions on this, please call Bob Smet at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:RBS:jar

cc: Region 2

217/782-2113

CONSTRUCTION PERMIT

PERMITTEE

Central Illinois Energy Cooperative  
Attn: Michael W. Smith  
23133 East County Highway 6  
Canton, Illinois 61520

Application No.: 02090041

I.D. No.: 057803AAD

Applicant's Designation: CANTONETOH

Date Received: September 23, 2002

Subject: Ethanol Plant

Date Issued:

Location: 23133 East County Highway 6, Canton

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a fuel ethanol plant with a primary fluidized bed boiler (with limestone bed injection, SNCR, dry scrubber and baghouse), a secondary gas-fired boiler, a backup flare, grain elevator, cooking/fermentation/liquefaction equipment (with associated methanator flare), indirect steam-tube distillers grain drying equipment, finished product tanks, ethanol loadout (controlled by a flare) and rail loadout (controlled by a flare), and other ancillary operations as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1.0 Unit Specific Conditions

1.1 Group 1: Boilers and Other Combustion Devices

1.1.1 Description

The source will have a primary fluidized bed (FB) boiler fired with coal refuse and coal to supply steam and electricity needed to run the ethanol plant. In addition, the exhaust generated from the distillers grain drying process will be routed through a cyclone and a forced draft fan to serve as combustion air to the boiler.

The emissions of the primary boiler will be controlled by addition of limestone in the bed, a selective noncatalytic reduction (SNCR) system, dry scrubber, and a baghouse. The feeding of limestone into the fluidized bed supports a reaction between calcium and sulfur that captures much of the sulfur that would otherwise be emitted as sulfur dioxide (SO<sub>2</sub>) from the process.

In the dry scrubber, lime in a slurry form is injected into the hot flue gases after the superheater. This should remove an additional quantity of sulfur so as to assure overall effectiveness of SO<sub>2</sub> removal of over 98%.

In the SNCR system, ammonia will be injected into the ductwork of the boiler to control emissions of nitrogen oxides (NO<sub>x</sub>). A baghouse will be used to control particulate matter.

The source will also have a smaller secondary, natural gas-fired boiler which will be used as a backup to the coal fired boiler and a grain dryer for drying wet grain.

#### 1.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description/Date of Construction	Emission Control Equipment
Group 1	Primary Boiler	Fluidized Bed Boiler, with limestone bed injection (211 mmBtu/hr for solid fuel)	Flue Gas Recirculation, SNCR, Dry Scrubber and Baghouse
	Secondary Boiler	Natural Gas-Fired Boiler (160 mmBtu/hr)	Low NO <sub>x</sub> Burner
		Raw Grain Dryer (rated at 51 mmBtu/hr)	None
		Lime Truck Unloading to Two Lime Storage Bins	Bin vent filters
		Flare	None

#### 1.1.3 Applicability Provisions and Applicable Regulations

- a. An "affected boiler" for the purpose of these unit specific conditions is a boiler identified in Conditions 1.1.1 and 1.1.2.
- b. Affected Coal Fired Boiler:
  - i. The affected coal-fired boiler is subject to the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db. On and after the date on which the initial performance test is completed or is required to be completed under 40 CFR 60.8, whichever date comes first:
    - A. Opacity shall not exceed 20 percent (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. This standard shall apply at all times, except during periods of startup, shutdown or

malfunction as provided by 40 CFR 60.2 and 60.8(c).

B. Particulate matter emissions shall not exceed 22 ng/J per actual heat input in any one hour period (0.051 lb/million Btu), pursuant to 40 CFR 60.43b(a)(1). This standard shall apply at all times, except during periods of startup, shutdown or malfunction as provided by 40 CFR 60.2 and 60.8(c).

C. Nitrogen oxide emissions shall not exceed 260 ng/J (0.60 lb/million Btu) on a 30-day rolling average, pursuant to 40 CFR 60.44b(a)(3)(ii).\*

\* Condition 1.1.6 requires a lower emission rate.

D. Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 520 ng/J (1.2 lb/million Btu) and 10 percent of the potential SO<sub>2</sub> emission rate,\* on a 30-day rolling average, pursuant to 40 CFR 60.42b(a).

\* Condition 1.1.6 requires a lower emission rate.

ii. At all times, the Permittee shall maintain and operate the boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

iii. The emission of carbon monoxide (CO) from the affected boiler shall not exceed 200 ppm CO, corrected to 50 percent excess air [35 IAC 216.121].

c. Natural Gas-Fired Boiler:

i. The affected gas-fired boiler is subject to the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db.

A. Nitrogen oxide (NO<sub>x</sub>) emissions shall not exceed 45 ng/J (0.10 lb/million Btu) on a 30-day rolling average, pursuant to 40 CFR 60.44b.

- B. This permit is issued based on the boiler not being subject to the limits of the NSPS for opacity and sulfur dioxide because the boiler does not burn oil or solid fuel.
- ii. At all times, the Permittee shall maintain and operate the boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).
- iii. The emission of smoke or other particulate matter from the boiler shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b) and 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]
- iv. The emission of carbon monoxide (CO) into the atmosphere from the boiler shall not exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].

d. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown of an affected boiler, the Permittee is authorized to continue operation of the affected boiler in violation of the applicable requirements of Conditions 1.1.3(b)(iii) and (iv) and (c)(iii), as necessary to prevent risk of injury to personnel or severe damage to equipment, provided however that operation shall not continue solely for the economic benefit of the owner or operator of the plant. This authorization is made pursuant to 35 IAC 201.262 and is subject to the following requirements:

- i. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable repair the boiler or remove the boiler from service, so that excess emissions cease, unless shutting down the boiler would lead to a greater amount of emissions during subsequent startup than would be caused by continuing to run the boiler for a short period until repairs can be made. This shall be accomplished within 24 hours or

noon of the Illinois EPA's next business day, whichever is greater, unless the Permittee obtains an extension from the Illinois EPA. The Illinois EPA may grant such extension if the Permittee demonstrates that the affected boiler(s) could not be reasonably repaired or removed from service within the allowed time and that, based on the actions which have been taken and will be taken, the Permittee is taking reasonable steps to minimize excess emissions and will repair the affected boiler(s) or remove it from service as soon as practicable.

- ii. The Permittee shall operate and maintain the boiler in accordance with written operating procedures developed and maintained by the Permittee. These procedures shall reflect good air pollution control practice for the boiler, including use of natural gas in the coal-fired boiler during startup and malfunction or breakdown as practicable to minimize excess emissions.
  - iii. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 1.1.9 and 1.1.10 with respect to malfunctions and breakdowns.
  - iv. Following notification to the Illinois EPA of a malfunction or breakdown with excess emissions, the Permittee shall comply with all reasonable directives of the Illinois EPA with respect to such incident, pursuant to 35 IAC 201.263.
- e. Startup Provisions

The Permittee is authorized to operate the affected boiler(s) in violation of the applicable state emission standards of Conditions 1.1.3(b)(iii) and (iv) and (c)(iii) and (iv) during startup, pursuant to 35 IAC 201.262.

#### 1.1.4 Non-Applicability of Regulations of Concern

For the affected coal-fired boiler, this permit is issued based on the state emissions standards for particulate matter and opacity at 35 IAC 212.123 and 212.204 being superseded by more stringent standards pursuant to the NSPS.

1.1.5 Operational and Production Limits and Work Practices

- a. i. The maximum firing rate of the coal-fired boiler shall not exceed 211 mmBtu/hr.
- ii. The usage of solid fuel in the coal-fired boiler shall not exceed 10,000 tons/month and 120,000 tons/year.
- iii. The coal-fired boiler shall be designed so that an initial startup and basic shakedown of the boiler can be completed before initial startup of the feed drying equipment.
  - A. The uncontrolled organic material emissions from the feed drying equipment and other process units that enter the boiler shall be reduced such that the material emitted from the boiler is either no more than 4 percent of the uncontrolled emissions (at least 96 percent control) or no more than 16 ppm by volume.
- b. i. Natural gas shall be the only fuel fired in the gas-fired boiler.
- ii. The maximum firing rate of the boiler shall not exceed 160 mmBtu/hr.
- iii.
  - A. The operation of the boiler shall not exceed 1000 hours in any consecutive 12 month period.
  - B. Venting of the gas-fired boiler shall not exceed 325 hours per year. Natural gas usage in the gas-fired boiler during venting shall not exceed 160,000 scf/hr and 52,000,000 scf/yr.
  - C. Natural gas usage in the gas-fired boiler shall not exceed 80,000 scf/hr and 160,000,000 scf/year.
  - D. The above restrictions on the operation of the gas-fired boiler shall become effective when shakedown of the coal-fired boiler is complete (See also Condition 1.1.6(a)(iii)).
- c. i. Natural gas shall be the only fuel fired in the raw grain dryer.

- ii. The raw grain dryer shall not operate for more than 1,000 hours in any 12 month period.
- iii. Natural gas usage in the raw grain dryer shall not exceed 51,000,000 scf/year.
- d. The exhaust from the anaerobic digester shall be routed through the methanator flare during periods of malfunction, breakdown and startup of the affected coal-fired boiler.

#### 1.1.6 Emission Limitations

- a. i. The emissions of the affected coal-fired boiler shall not exceed the following limits. The annual limits address all emissions from the boiler, including emissions during startup, malfunction and breakdown, as authorized by Condition 1.3(d) and (e).

CO		PM*		VOM	
(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)
19.86	87.0	8.36	36.6	4.57	20.0

NO <sub>x</sub>		SO <sub>2</sub>		HCl	
(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)	(Lb/Hr)	(T/Yr)
110.0	90.0	330.0	96.2	2.1	9.2

\* Filterable particulate matter

- ii. The emissions of NO<sub>x</sub> and SO<sub>2</sub> from the affected coal-fired boiler shall not exceed 0.120 and 0.112 lb/mmBtu, respectively, on a 30-day running average. Compliance with these limits shall be determined in accordance with the NSPS, unless emissions are on an hourly basis in pounds, in which case compliance with this limit may be determined by dividing the total mass of emissions by the total heat input for each period of 30 boiler operating days.
- iii. The above limitations are not effective during shakedown of the boiler. During shakedown of the boiler, the Permittee shall operate the boiler and associated control equipment to the extent reasonably practicable and the emissions of the coal-fired boiler and gas-fired boiler, combined, shall not exceed the following limitations during each calendar

month. For this purpose, unless extended in writing by the Illinois EPA based on a showing by the Permittee, the shakedown period shall end on the last day of the fifth complete month after the coal-fired boiler first fired solid-fuel.

CO	PM	VOM	NO <sub>x</sub>	SO <sub>2</sub>	HCl
7.35	2.50	1.50	7.15	7.20	0.70

Limits are in tons.

- b. The emissions of the affected gas-fired boiler shall not exceed the following limits. The annual limits address all emissions from the boiler including emissions during startup, malfunction and breakdown as authorized by Condition 1.1.3(d) and (e). The limitations on annual emissions shall become effective when shakedown of the coal-fired boiler is complete (See also Condition 1.1.6(a)(iii)).

CO	PM*	VOM	NO <sub>x</sub>	SO <sub>2</sub>
(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)
13.44 6.72	1.22 0.61	0.88 0.44	8.0 4.0	0.1 0.05

\* Filterable particulate matter

Natural Gas-Fired Boiler (During Venting):

CO	PM*	VOM	NO <sub>x</sub>	SO <sub>2</sub>
(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)
13.44 2.18	1.22 0.20	0.28 0.14	8.0 1.3	0.1 0.02

\* Filterable particulate matter

- c. The emissions of the raw grain dryer shall not exceed the following limits:

CO	PM*	VOM	NO <sub>x</sub>	SO <sub>2</sub>
(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)	(Lb/hr) (T/yr)
4.28 2.14	25.03 12.51	0.28 0.44	2.55 1.28	0.03 0.02

\* Filterable particulate matter

- d. Emissions of VOM, CO and NO<sub>x</sub> directly from the methanator (which is controlled by the digester flare) shall each not exceed 1.2 lb/hour and 0.44 tons/year.

- e. Emissions of particulate matter from lime unloading and storage shall not exceed 0.1 lb/hour and 0.44 tons/year.

1.1.7 Testing Requirements

- a. The Permittee shall perform monthly sampling for the solid fuel used in the coal-fired boiler using the procedures in ASTM D2234, which result in data at least as reliable as classification II - D-2, defined in ASTM D2245 as manual sampling - stationary coal/coke sampling - random spacing and analyze these samples for ash content, sulfur content, and heat content according to the applicable methods and procedures in 35 IAC 214.101(c). Analytical results obtained from the supplier of a fuel may also be used to demonstrate compliance with this provision.
- b. The Permittee shall have emissions testing performed for the affected units in accordance with Condition 2.0.

1.1.8 Monitoring Requirements

- a. Emissions monitoring for nitrogen oxides:

For each affected boiler, pursuant to 40 CFR 60.48b the Permittee shall install\*, calibrate, operate and maintain a continuous emission monitoring system (CEMS) for measuring the NO<sub>x</sub> emissions from the affected boilers. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. This CEMS shall be operated during all periods of operation of the affected boilers except for CEMS breakdowns and repairs. Data is to be recorded during calibration checks, and zero and span adjustments.

The 1-hour average NO<sub>x</sub> emission rates measured by the CEMS shall be expressed in lb/million Btu heat input and shall be used to calculate emission rates for purposes of the NSPS. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(b). At least 2 data points must be used to calculate each 1-hour average. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operations of the CEMS.

\* The monitor shall be installed and operational prior to initial firing of solid fuel in the boiler.

b. Monitoring for opacity:

For the affected coal-fired boiler, pursuant to 40 CFR 60.48b, the Permittee shall install\*, operate, calibrate and maintain continuous monitoring equipment for the measurement of opacity from the boiler.

i. This monitoring equipment shall be operated pursuant to written or electronic monitoring procedures that include a quality assurance/control plan, which procedures shall reflect the manufacturer's instructions as adopted by the Permittee based on its experience;

ii. This monitoring equipment shall meet the performance specifications and operating requirements in Sections 3.1 through 3.8 of 40 CFR 51, Appendix P (1987); and

\* The monitor shall be installed and operational prior to initial firing of solid fuel in the boiler.

c. Emissions monitoring for sulfur dioxides:

Pursuant to 40 CFR 60.47b, for affected boiler 1, the Permittee shall install\*, calibrate, operate and maintain a CEMS for measuring the SO<sub>2</sub> concentrations from the affected boilers. The procedures and either oxygen (O<sub>2</sub>) or carbon dioxide (CO<sub>2</sub>) concentrations and shall record the output of the systems, pursuant to 40 CFR 60.47b and 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. The sulfur dioxide concentrations shall both be monitored at the inlet and outlet of the sulfur dioxide control device. This CEMS shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler operating days [40 CFR 60.47b(c)]. Data is to be recorded during calibration checks, and zero and span adjustments.

The 1-hour average SO<sub>2</sub> emission rates measured by the CEMS shall be expressed in lb/million Btu heat input and shall be used to calculate emission rates for purposes of the NSPS. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(b). At least 2 data points must be used to calculate each 1-hour average [40 CFR 60.47b(d)].

The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operations of the CEMS.

- \* The monitor shall be installed and operational prior to initial firing of solid fuel in the boiler.

d. Emissions monitoring for carbon monoxide

For the affected coal-fired boiler, the Permittee shall install a CEMS for carbon monoxide within one year of the initial testing conducted pursuant to Conditions 1.1.7(b) and 2.0 unless such testing, or testing in the subsequent nine months, demonstrates that the boiler can consistently comply with a CO emission limitation of 15 pounds per hour. If such a CEMS is required, the Permittee shall thereafter calibrate, operate and maintain the CEMS in accordance with the generally applicable requirements of the NSPS for CEMS, including recordkeeping and reporting as set forth in Conditions 1.1.9(b) and 1.1.10(a). In addition, the Permittee shall demonstrate compliance with the hourly CO emission limit in Condition 1.1.6(a)(i) as a three-hour block average. In the operating permit for the plant, the Illinois EPA may revise the requirements applicable to the CEMS, including allowing the removal of the CEMS, based on the data that has been collected.

e. Flare

The flare shall be equipped with a monitor or other device to confirm presence of a flame if process gas is being sent to the flare.

1.1.9 Recordkeeping Requirements

- a. The Permittee shall maintain a file that contains the following information:
  - i. The maximum rated heat input of each affected unit.
  - ii. The current Process and Instrumentations Diagram(s) for the plant.
  - iii. Records of the Permittee's established operating and maintenance procedures for each affected boiler.

- b. The Permittee shall maintain records of the following information for NO<sub>x</sub> and SO<sub>2</sub> for the coal-fired boiler and NO<sub>x</sub> for the gas-fired boiler, for each boiler operating day, pursuant to the NSPS:
  - i. Calendar date;
  - ii. The average hourly emission rates (expressed in lb/million Btu heat input) measured or predicted;
  - iii. The 30-day average emission rate (lb/million Btu heat input) calculated at the end of each affected boiler operating day from the measured or predicted hourly emission rates for the preceding 30 boiler operating days;
  - iv. Identification of the boiler operating days when the calculated 30-day average emission rates are in excess of an applicable standard, with the reasons for such excess emissions as well as a description of corrective actions taken;
  - v. Identification of the affected boiler operating days for which emission data have not been obtained, including a description of corrective actions taken;
  - vi. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;
  - vii. Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;
  - viii. Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system;
  - ix. Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 o3;
  - x. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of 40 CFR 60.

c. Affected Coal-Fired Boiler:

- i. Total operating hours (hours/month and hours/year);
- ii. Amount of fuel consumed, by type (tons/month and tons/year) and the annual capacity factor, determined on a 12-month rolling basis with a new annual capacity factor calculated for each month;
- iii. Amounts of limestone, lime and ammonia used in the boiler (tons/month);
- iv. Records for sulfur content (wt. percent) in the fuel supply to the coal-fired boiler received. Supplier analysis of the fuel supplied to the Permittee may be used to satisfy fuel sampling requirements, provided that sampling and analysis follow ASTM methods; and
- v. The Permittee shall keep records of the annual  $\text{NO}_x$ , VOM, CO, PM,  $\text{SO}_2$  and HCl emissions from the affected boiler, based on continuous emissions monitoring data, fuel consumption and applicable emission factors established in Condition 1.1.12, with supporting calculations.

d. Affected Gas-Fired Boiler:

- i. Natural gas consumption (mmscf/day and mmscf/yr), and the annual capacity factor, determined on a 12-month rolling basis with a new annual capacity factor calculated for each month;
- ii. Hours of operation (hours/day and hours/year); and
- iii. Emissions of  $\text{NO}_x$ , VOM, CO, PM and  $\text{SO}_2$  calculated based on compliance procedure established in Condition 1.1.12.

e. Records for Startups of Affected Boilers:

The Permittee shall maintain records for each startup of an affected boiler.

f. Records for Continued Operation during Malfunctions and Breakdowns of Affected Boilers:

- i. A maintenance and repair log for each affected boiler and associated control equipment, listing each activity performed with date; and
- ii. Records for each incident when operation of an affected boiler continued during malfunction or breakdown, including the following information:
  - A. Date and duration of malfunction or breakdown.
  - B. A description of the malfunction or breakdown.
  - C. The corrective actions used to reduce the quantity of emissions and the duration of the incident.
  - D. If excess emissions occurred for four or more hours:

An explanation why continued operation of the affected boiler was necessary.

The preventive measures planned or taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity.

An estimate of the magnitude of excess emissions during the incident.
- g. The Permittee shall keep records of maintenance, calibration and operational activity associated with continuous monitoring equipment.
- h. Records for Other Units:

The Permittee shall keep the following records for the other units:

  - i. Operating hours and fuel usage of the raw grain dryer.
  - ii. Operating hours of the flare.

#### 1.1.10 Reporting and Notification Requirements

- a. The Permittee shall fulfill applicable reporting requirements of the NSPS, 40 CFR 60.7 and 49b, for

the affected boilers by sending the following notifications and reports to the Illinois EPA:

- i. The Permittee shall submit notification of the date of initial startup of the boiler, as provided by 40 CFR 60.7. This notification shall include: (1) the design heat input of the boiler, and (2) the annual capacity factor at which the Permittee anticipates operating the boiler.
- ii. The Permittee shall submit informational reports containing the information recorded under 40 CFR 60.49b(g).
- iii. The Permittee shall submit reports for excess emissions.

These reports shall be postmarked by the 30<sup>th</sup> day following the end of reporting period, unless submittal in electronic format is approved by the Illinois EPA.

- b. The Permittee shall submit excess emission reports for any calendar quarter during which there are excess emissions from the affected boiler. If there are no excess NO<sub>x</sub> emissions during the calendar quarter, the Permittee shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. Excess emissions are defined as any calculated 30-day rolling average emission rate, which exceeds the applicable limits in Conditions 1.1.3(b) or 1.1.6(a)(ii) or any hourly rate which exceeds the limit in Condition 1.1.6(a)(i).
- c. The excess emission reports shall also address any other exceedance of the requirements of this permit for the affected boilers, as determined by the records required by this permit or by other means. For this purpose, the report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.
- d. For other affected units, the Permittee shall notify the Illinois EPA within 30 days of deviations from applicable requirements of this permit.

1.1.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.1.12 Compliance Procedures

- a. For the affected boilers, compliance with the NO<sub>x</sub> standards and limitations shall be determined by the continuous emissions monitoring system required by Condition 1.1.8(a).
- b. For the affected coal-fired boiler, compliance with SO<sub>2</sub> and opacity standards and limitations shall be determined by the continuous emissions monitoring system required by Condition 1.1.8(c).
- c. For pollutants for which continuous emissions monitoring is not conducted, compliance with applicable emission standards and limitations shall be based on emission testing, the records required by Condition 1.1.9, proper operation of equipment, and the use of appropriate emission factors.

1.2 Unit 2 - Fuel Handling Operations  
Various control measures

1.2.1 Description

The Permittee transfers and stores fuel for the main boiler in an enclosed building. Various conveyor belts (with associated hoppers) and transfer points) transfer fuel from the enclosed pile to the main boiler. The waste fuel is not crushed on-site. Particulate matter (PM) emissions associated with these operations are controlled by various measures including the moisture content of the fuel, enclosure and covers, and dust collection devices.

The Permittee also handles lime for the main boiler in similar operations.

1.2.2 List of Emission Equipment and Pollution Control Equipment

The following is a list of the coal handling operations and associated control systems at the source as of the "date issued" as shown on page 1 of this permit.

Emission Unit	Description	Emission Control Equipment
1-B	Truck Receiving*	Enclosed Building
	Fuel Transfer Conveyor System*	Bag Filter**

\* Bulk Coal Handling Units enclosed under the enclosed coal building

\*\* PM emissions from the transfer belt conveyor and fuel supply conveyor are routed to a bag filter

1.2.3 Applicability Provisions and Emissions Standards

- a. For the purpose of these unit-specific conditions, an "affected operation" is an emission unit that is described in Condition 1.2.1 and 1.2.2. An affected unit does not include a unit that changes the size of the material, e.g., by addressed by Section 1.3.
- b. Each affected operation shall comply with the standard in Condition 3.0, which addresses visible emissions of fugitive particulate matter, as defined by 35 IAC 211.2490, from the operation. [35 IAC 212.301]
- c. Each affected operation shall comply with the standard in Condition 3.0, which addresses the

opacity of the emission of smoke or other particulate matter from the operation. [35 IAC 212.123]

1.2.4 Non-Applicability of Regulations of Possible Concern

Affected operations are not subject to 35 IAC 212.321 or 212.322 because of the disperse nature of the operations, as generally addressed by 35 IAC 212.323.

1.2.5 Operational Limits

None

Note: The throughput of affected operations is constrained by the limitation for the fluidized boiler.

1.2.6 Emission Limits

Annual emissions of particulate matter (PM) from the affected operations shall not exceed 1.9 tons/year. Compliance with this annual emission limit shall be determined from a running total of 12 months of emission data, calculated from the material throughput and appropriate emission factors (Refer to Conditions 1.2.10(b) and (c), and 1.12.13(a)).

1.2.7 Control Requirements

- a. The Permittee shall implement and maintain control measures for the affected operations, such as enclosure, natural surface moisture, and use of dust collection devices, that minimize visible emissions of particulate matter and provide a reasonable assurance of compliance with the applicable emission standard in Condition 1.2.6.
- b. The Permittee shall operate and maintain each affected operation with the control measures identified in Condition 1.2.2.

1.2.8 Testing Requirements

None

1.2.9 Inspection Requirements

The Permittee shall perform inspections on at least a monthly basis of affected operations, including associated control measures, while the operations are in use, to confirm compliance with the requirements of Condition 1.2.7. These inspections may be scheduled so that only a number of affected operations are reviewed during each

inspection, provided however, that all affected operations shall be inspected at least once during each calendar quarter.

#### 1.2.10 Recordkeeping Requirements

The Permittee shall keep the following records related to the affected operations:

a. The Permittee shall maintain a record of any changes to the control measures that it is currently following for different affected fuel handling operations pursuant to Condition 1.2.7. These control measures, as defined by the Permittee through these records, are referred to as the "established control measures" in this subsection of the construction permit.

b. The Permittee shall maintain the following operating records:

The amount of coal and other solid fuels received at the source (tons/month, by type of fuel).

c. The Permittee shall maintain records of the following for the inspections required by Condition 1.2.9:

i. Date and time the inspection was performed and name(s) of inspection personnel;

ii. Area or specific operations inspected;

iii. The observed condition of the established control measures, for the inspected area or operations;

iv. A description of any maintenance or repair associated with established control measures that is recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., recommended action has been taken, is yet to be performed or no longer appears to be required; and

d. The Permittee shall maintain records of the following for each incident when the bag filter is not operating or visible emissions of fugitive particulate matter is present beyond the property line or at levels to cause an exceedance of the permitted limits:

- i. The date of the incident and identification of the affected operation(s) that were involved;
  - ii. A description of the incident, including the established control measures that were not present or implemented; the established control measures that were in use, if any; other control measures or mitigation measures that were implemented, if any; and the amount of PM emitted during the incident;
  - iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel;
  - iv. The length of time after the incident was identified that the affected operation(s) continued to operate before established control measures were in place or the operations were shutdown (to resume operation only after established control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a description of any mitigation measures that were implemented during the incident.
  - v. The estimated total duration of the incident, i.e., the total length of time that the affected operation(s) ran without established control measures and the estimated amount of coal handled during the incident; and
  - vi. A discussion of the probable cause of the incident and any preventative measures taken.
- e. The Permittee shall keep a maintenance and repair log for each dust collection device, associated with affected operations. This log shall list the date and nature of maintenance and repair activities performed on the control equipment.
  - f. To demonstrate compliance with Condition 1.2.6, the Permittee shall keep records of PM emissions (tons/month and tons/year), with supporting calculations.

#### 1.2.11 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of deviations from the requirements of Conditions 1.2.5, 1.2.6 or 1.2.7 as follows. Such notifications shall

include a description of each incident and a discussion of the probable cause of deviation, any corrective actions taken, and any preventative measures taken:

Notification within 30 days for operation of an affected operation that was not in compliance with applicable requirements in Conditions 1.2.7 that continued for more than 12 hours from the time that it was identified. Such notifications shall be accompanied by a copy of the records for the incident required by Condition 1.2.10(e).

1.2.12 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to affected operations without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to continue to comply with applicable requirements or to properly obtain a construction permit in a timely manner for any activity for which such a permit is required pursuant to 35 IAC 201.142:

Operation of dust suppressant systems;  
Operation of additional dust collection equipment.

1.2.13 Compliance Procedures

- a. Compliance with the emission standards of Condition 1.2.6 is addressed by the control, inspection and recordkeeping required by Conditions 1.2.7, 1.2.9 and 1.2.10, respectively.
- b. Compliance with the unit-specific emission limits of Condition 1.2.6 shall be based on the records required by Condition 1.2.9 and the use of manufacturer guaranteed emissions factors.

1.3 Group 3: Grain Receiving, Handling, Drying and Processing  
Control: Filters and Cyclone Dust Collectors

1.3.1 Description

Corn will arrive at the plant by both rail and truck. Corn will be screened to remove cobs and other foreign matter before being sent to storage. Any wet corn received greater than 20% moisture will also be dried prior to storage, with emissions vented to the gas-fired boiler.

To begin processing, corn will be transferred from storage to a "day bin", ground in a hammermill and conveyed to the slurry tank for enzymatic processing.

1.3.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
EP 10	Truck Grain Receiving	Grain Receiving Bag Filter
EP 10	Wet Grain Leg	Grain Receiving Bag Filter
EP 11	Wet Corn Storage Bin	None
EP 17	1 Raw Grain Column Dryer*	None
EP 10	Dry Grain Leg	Grain Receiving Bag Filter
EP 12	Screening and Cleaning	Grain Receiving Bag Filter
EP 11	Two Dry Corn Storage Bins	None
EP 12	3 Milled Grains Conveyors and Elevators	Cleaning/Milling Bag Filter

\* See Condition 1.1 for combustion operation.

1.3.3 Applicability Provisions and Applicable Regulations

- a. The "affected operations" for the purpose of these unit-specific conditions, are the grain handling operation as described in Conditions 1.3.1 and 1.3.2.
- b. The affected operations are subject to 35 IAC 212, Subpart S: Agriculture. The Permittee shall comply

with all applicable requirements of Subpart S (See also Condition 1.3.5).

- c. This permit is issued based on the affected operations being subject to 40 CFR 60, Subpart DD: Standards of Performance for Grain Elevators, because the source's total permanent grain storage capacity will exceed the applicability threshold of the NSPS (threshold of 1,000,000 bushels permanent storage capacity).

#### 1.3.4 Non-Applicability of Regulations of Concern

This permit is issued based on the affected operations not being subject to 35 IAC 212.321, because the affected operations comply with 35 IAC 212, Subpart S [35 IAC 212.461(a)].

#### 1.3.5 Operational Limits and Control Requirements

- a. Housekeeping Practices. The Permittee must implement and use the following housekeeping practices, pursuant to 35 IAC 212.461(b):
  - i. Air pollution control devices shall be checked daily and cleaned as necessary to insure proper operation.
  - ii. Cleaning and Maintenance.
    - A. Floors shall be kept swept and cleaned from boot pit to cupola floor. Roof or bin decks and other exposed flat surfaces shall be kept clean of grain and dust that would tend to rot or become airborne.
    - B. Cleaning shall be handled in such a manner as not to permit dust to escape to the atmosphere.
    - C. The yard and surrounding open area, including but not limited to ditches and curbs, shall be cleaned to prevent the accumulation of rotting grain.
  - iii. Dump Pit.
    - A. Aspiration equipment shall be maintained and operated.

- B. Dust control devices shall be maintained and operated.
- iv. Property. The yard and driveway of any source shall be asphalted, oiled or equivalently treated to control dust.
- v. Housekeeping Check List. Housekeeping check lists to be developed by the Illinois EPA shall be completed by the manager and maintained on the premises for inspection by check lists to be developed by the personnel.
- b. Cleaning and Separating Operations.
  - i. Particulate matter generated during cleaning and separating operations shall be captured to the extent necessary to prevent visible particulate matter emissions directly into the atmosphere.
  - ii. Air contaminants collected from cleaning and separating operations shall be conveyed through air pollution control equipment, which has a rated, and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.
- c. Dump-Pit Areas
  - i. Induced draft shall be applied to major dump pits and their associated equipment (including, but not limited to, boots, hoppers and legs) to such an extent that a minimum face velocity is maintained, at the effective grate surface, sufficient to contain particulate emissions generated in unloading operations. The minimum face velocity at the effective grate surface shall be at least 200 feet per minute, which shall be determined by using the equation:  
$$V = Q/A$$

Where:

V = Face velocity

Q = Induced draft volume in scfm

A = Effective grate area in ft<sup>2</sup>

- ii. The induced draft air stream shall be confined and conveyed through air pollution control equipment which has an overall rated and actual particulate collection efficiency of not less than 90 percent by weight;
  - iii. Means or devices (including, but not limited to, wind deflectors) shall be employed to prevent a wind velocity in excess of 50 percent of the induced draft face velocity at the pit; provided, however, that such means or devices do not have to achieve the same degree of prevention when the ambient air wind exceeds 25 mph. The wind velocity shall be measured, with the induced draft system not operating, at a point midway between the dump-pit area walls at the point where the wind exits the dump-pit area, and at a height above the dump-pit area floor of approximately 2 ft; or
- d. Internal Transferring Area.
- i. Internal transferring area shall be enclosed to the extent necessary to prohibit visible particulate matter emissions directly into the atmosphere.
  - ii. Air contaminants collected from internal transfer operations shall be conveyed through air pollution control equipment which has a rated and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.
- e. The total capacity of grain storage bins at the plant shall not exceed 1,000,000 bushels.
- f. The Permittee shall operate, maintain, and repair all air pollution control equipment in a manner that assures that the applicable emission limits set in this permit are met at all times. The actions taken by the Permittee to meet this requirement shall include at least the following:
- i. Written operating procedures shall be maintained and updated describing normal process and equipment operating parameters; monitoring or instrumentation for measuring control equipment operating parameters, if any; and control equipment inspection and maintenance practices. With respect to

control equipment maintenance practices, the operating procedures may incorporate the manufactures recommended operating instructions, if a copy of these instructions is attached to the procedures.

- ii. Visual inspections of air pollution control equipment shall be conducted on a regular schedule. These inspections shall include a detailed inspection of the performance and condition of control equipment at least once per year.
- iii. Prompt repairs shall be made upon identification of need, either as a consequence of formal inspections or other observations.
- iv. Written records of inspection, maintenance and repair activities shall be kept in accordance with Condition 1.3.9(c).

#### 1.3.6 Emission Limitations

- a. i. On and after the 60<sup>th</sup> day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, the Permittee shall not cause to be discharged into the atmosphere any gases which exhibit greater than 0 percent opacity from any affected column dryer with column plate perforation exceeding 2.4 mm diameter (ca. 0.094 inches). [40 CFR 60.302(a)]
- ii. On and after the date on which the performance test required to be conducted pursuant to 40 CFR 60.8 is completed, the Permittee shall not cause to be discharged into the atmosphere from any affected unit, other than a grain dryer, any process emission which:
  - A. Contains particulate matter in excess of 0.023 g/dscm (ca. 0.01 g/dscf).
  - B. Exhibits greater than 0 percent opacity.
- iii. On and after the 60th day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, no owner or operator subject to the provisions of this

subpart shall cause to be discharged into the atmosphere any fugitive emission from:

- A. Any individual truck unloading station, railcar unloading station, or railcar loading station, which exhibits greater than 5 percent opacity.
  - B. Any grain handling operation which exhibits greater than 0 percent opacity.
  - C. Any truck loading station which exhibits greater than 10 percent opacity.
- b. Emissions of particulate matter from the affected operations shall not exceed the following limits:

Emission Unit	Emission Factor (lb/ton)	Control Efficiency, %	PM Emissions (tons/year)
Grain Receiving	0.035	79.2	1.5
Grain Legging	0.061	99	1.34
Corn Storage Vents	--	--	0.44
Grain Cleaning	0.075	99	0.2
Spent Grain Transfer	0.061	90	0.4
Hammermilling	0.012	99	0.03
Milled Grain Transfer	0.061	90	0.95

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

#### 1.3.7 Testing Requirements

See Condition 2.0

#### 1.3.8 Monitoring Requirements

None

#### 1.3.9 Recordkeeping Requirements

In addition to the records required by Condition 3.0, the Permittee shall maintain records of the following items for the affected operations to demonstrate compliance with Conditions 1.3.5 and 1.3.6:

- a. Grain Received (bushels/month and bushels/year);
- b. Condition of equipment at least once per operating day and key operating parameters for air pollution control equipment, at least once per day;
- c. Inspections, other equipment observations, preventative maintenance, maintenance activities other than preventative maintenance, and repair of air pollution control equipment which includes: date, duration, nature, and description of observation or action; and
- d. PM emissions from the affected grain handling operation (tons/month and tons/year) with supporting calculations.

1.3.10 Reporting Requirements

- a. The Permittee shall fulfill all applicable reporting and notification requirements of the NSPS, 40 CFR 60.7, for the affected operations.
- b. The Permittee shall promptly notify the Illinois EPA of deviations of the affected operations with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:
  - i. Operation of the affected operations in excess of the throughput limitations specified by Conditions 1.3.5(e) and (f) within 30 days of such an occurrence.
  - ii. Emissions of PM from the affected grain handling operation in excess of the limits specified in Condition 1.3.6 within 30 days of such an occurrence.
  - iii. Any other deviations that apply to affected operations.

1.3.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.3.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.3.6 shall be based on the records required by Condition 1.3.9, emission factors published by USEPA for

uncontrolled operations and the manufacturer guaranteed emissions rates for air pollution control equipment for controlled operation.

#### 1.4 Group 4: Fermentation

##### 1.4.1 Description

Ethanol is produced by fermentation of the starch in corn. The corn is first prepared for fermentation by converting it to "mash", by the addition of water and enzymes to ground corn in a series of saccharification tanks, that with heating, break the ground corn into fine slurry. In the fermentation tanks, yeast is added to the corn slurry to begin the batch fermentation process.

The CO<sub>2</sub>-rich gas generated by the fermentation tanks is routed through a scrubber to recover ethanol and other organic compounds in the exhaust. The wastewater generated from the scrubbing process is routed back to the fermentation mash for distillation and dehydration.

##### 1.4.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
EP 5-A	Slurry Tank	Fermentation Scrubber
	In-line Cooking System	
	1 Flash Tank	
	1 Yeast Tank	
	2 Liquefaction Tanks	
	3 Fermenters	
	1 Beer Well	

##### 1.4.3 Applicability Provisions and Applicable Regulations

- a. An "affected process" for the purpose of these unit specific conditions is an emission unit described in Conditions 1.4.1 and 1.4.2.
- b. An affected process is subject to 35 IAC 212.321(b) (1), which provide that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or

premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].

1.4.4 Non-Applicability of Regulations of Concern

N/A

1.4.5 Operational and Production Limits and Work Practices

The Permittee shall maintain the affected process and associated air pollution control equipment in accordance with good air pollution control practice to assure proper functioning of equipment and minimize malfunctions, including performing maintenance in accordance with manufacturer recommendations.

1.4.6 Emission Limitations

- a. Emissions of VOM from an affected process shall not exceed the following:

VOM Emissions	
(Lb/Hr)	(Ton/Yr)
5.8	8.43

- b. Emissions of particulate matter from any affected process shall not exceed 0.1 lb/hr and 0.44 tons/year.

1.4.7 Testing Requirements

See Section 2.0

1.4.8 Monitoring Requirements

The Permittee shall monitor the following operating parameters for the fermentation scrubber:

- a. The pressure loss of the gas stream through the scrubber. The monitoring device must be accurate to within  $\pm 0.5$  psig.
- b. The scrubbing liquid flow rate or supply pressure to the scrubbing chamber. The monitoring device must be accurate within  $\pm 5$  percent of the design scrubbing liquid supply pressure.

#### 1.4.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected process:

- a. Recordkeeping of process parameters
  - i. VOM concentration in the CO<sub>2</sub> feed (in lb VOM/lb of CO<sub>2</sub>);
  - ii. Scrubber Efficiency (%); and
  - iii. CO<sub>2</sub> flow to the scrubber (in lb/hr).
- b. Recordkeeping of maintenance and repair:
  - i. Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment.
  - ii. Records for any period during which any affected process was in operation when the scrubber was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made.
  - iii. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any affected process was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.
- c. Monthly and annual emissions of VOM calculated in accordance with compliance procedures established in Condition 1.4.12.

#### 1.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of noncompliance with the emission limitations as follows:

If there is an exceedance of the emission limitation of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA within 30 days. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance and efforts to reduce emissions and future occurrences.

1.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

1.4.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.4.6 shall be based on the records required by Condition 1.4.9 and the use of manufacturer guaranteed emissions factors.

1.5 Group 5: Distillation and Spent Distillers Grain Drying

1.5.1 Description

During the distillation process, the solids and water are separated from the ethanol-rich "beer" produced in the fermentation tanks with a vacuum distillation system, to produce 190 proof ethanol (5% water), which is dried to 200 proof in a molecular sieve. Denaturant is added to the finished product tank prior to loadout. The emissions from the distillation process are vented through a scrubber and then routed to the coal-fired boiler.

Stillage from the bottom of the distillation system are routed to mechanical centrifuges for de-watering. The water, "thin stillage" is pumped to a steam driven evaporator to produce a thick syrup. This syrup, and wet cake from the centrifuge and the syrup solubles from the evaporator, are conveyed to dryers that are indirectly heated with steam. The dryers remove moisture and produce dried distillers' grains with solubles (DDGS), which is sold as cattle feed. The feed is pneumatically conveyed to a storage area to cool and readied for shipment via rail car or truck.

A non-contact cooling tower is used as a heat exchanger to cool the heat generated during the production process.

## 1.5.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description	Emission Control Equipment
EP 5-C	Distillation Process	Distillation & Dehydration System	Process Scrubber and Main Coal-Fired Boiler
		Beer Column	
		Whole Stillage Tank	
		Rectifier Column	
		Side Stripper	
		Molecular Sieve	
		Decanting Centrifuges	
EP 3		Two Dried Distillers' Grains with Solubles (DDGS) Dryers and a Cooler	DDGS Cyclones and Coal/Co-Gen Boiler (see Condition 1); No control if boiler is shutdown
		DDGS Storage Building	Enclosed
EP 10		DDGS Loadout (Truck & Rail)	Loadout Bag Filter
EP 13		Spent Distillers Grain Internal Operations/Flat Storage	Enclosed Building
EP 10		Spent Distillers Grain Wet Cake Loadout	None
EP 5-B		Cooling Tower	Drift Eliminator

## 1.5.3 Applicability Provisions and Applicable Regulations

- a. An "affected process" for the purpose of these unit specific conditions is an emission unit described in Conditions 1.5.1 and 1.5.2.
- b. An affected process is subject to 35 IAC 212.321(b) (1), which provides that:

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321 (See also Attachment 2) [35 IAC 212.321(a)].

1.5.4 Non-Applicability of Regulations of Concern

This permit is based on the affected process being exempted from applicability of 35 IAC Part 215, Subpart K because the organic material emissions in the exhaust stream are routed to the process scrubber and coal-fired boiler.

1.5.5 Operational and Production Limits and Work Practices

- a. Direct venting of the DDGS exhaust to the atmosphere shall not exceed 325 hours in any 12 month period.
- b. The Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.321 shall be met at all times. Proper maintenance shall include the following minimum requirements:
  - i. Visual inspection of air pollution control equipment;
  - ii. Expeditionary repairs, unless the emission unit is shutdown.

1.5.6 Emission Limitations

- a. The affected process is subject to the following limitations when the primary boiler is shutdown:
  - i. Distillers Grain Dryers

VOM		CO		PM	
Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr	Lb/Hr	Ton/Yr
340.8	55.38	69.49	11.29	3.4	5.27

ii. Distillation Process Scrubber

VOM	
Lb/Hr	Ton/Yr
3.55	0.58

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

- b. Emissions of PM and PM<sub>10</sub> from the cooling tower, other DDGS internal transfer/loading operations shall not exceed the following limitations:

Process or Operation	Emission Factor Lb/hr	Emissions tons/year
Cooling Tower	1.12	4.92
Spent grain internal operations	0.09	0.40
DDGS truck/rail transfer	1.29	5.65

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.5.7 Testing Requirements

See Condition 2.0

1.5.8 Instrumentation and Monitoring Requirements

None

1.5.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected process to demonstrate compliance with conditions of this permit:

- a. Process Parameters for affected processes listed in Condition 1.5.6(a):

- i. Air flow (acfm);
- ii. Temperature (°F);
- iii. Dry air flow (in lb/hr);

- iv. Water volume (lb/hr).
- b. Total hours per month that the DDGS exhaust was vented directly to the atmosphere.
- c. Cooling tower process parameters
  - i. Water circulation rate (in gal/min)
  - ii. Total dissolved solids concentration (ppm); and
  - iii. Drift loss (%).
- d. The Permittee shall maintain the following records for maintenance and repair:
  - i. Written or electronic records of inventory and documentation of inspections, maintenance, and repairs of all air pollution control equipment;
  - ii. The owner or operator shall document any period during which any process emission unit was in operation when the air pollution control equipment was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made;
  - iii. Copies of records shall be submitted to the Illinois EPA within ten (10) working days after a written request by the Illinois EPA; and
  - iv. Upon written request by the Illinois EPA, a report shall be submitted to the Illinois EPA for any period specified in the request stating the following: the dates during which any process emission unit was in operation when the air pollution control equipment was not in operation or was not operating properly, documentation of causes for pollution control equipment not operating or not operating properly, and a statement of what corrective actions were taken and what repairs were made.

- e. Monthly and annual emissions of PM<sub>10</sub> and VOM calculated in accordance with compliance procedures in Condition 1.5.12.

#### 1.5.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of noncompliance with the emission limitations as follows:

If there is an exceedance of the emission limitations of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance first becomes known. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

#### 1.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

#### 1.5.12 Compliance Procedures

- a. Compliance with the particulate matter limitations in Condition 1.5.6 is assured and achieved by the proper operation and maintenance of the filters and scrubbers as required by this section and the work-practices inherent in operation of the affected distillation process.
- b. Compliance with the unit-specific emission limits of Condition 1.5.6 shall be based on the records required by Condition 1.5.9 and the use of manufacturer guaranteed emissions factors.

1.6 Group 6: Ethanol and Denaturant Storage Tanks

1.6.1 Description

Internal floating roof storage tank(s) are used to store denaturant and product ethanol.

1.6.2 List of Emission Equipment and Pollution Control Equipment

Storage Tank EP 8	Description	Emission Control Equipment
T01	200 Proof Day Tank Nominal Capacity: 78,000 Gallons	Internal Floating Roof with Primary and Secondary Seals
T02	190 Proof Ethanol Storage Nominal Capacity: 39,000 Gallons	Internal Floating Roof with Primary and Secondary Seals
T03	Denaturant Tank Nominal Capacity: 30,000 Gallons	Internal Floating Roof with Primary and Secondary Seals
T04	Finished Product Storage Tank Nominal Capacity: 500,000 Gallons	Internal Floating Roof with Primary and Secondary Seals

1.6.3 Applicability Provisions

- a. An "affected tank," for the purposes of these unit specific conditions is a storage tank as described in Conditions 1.6.1 and 1.6.2 that is subject to the control requirement of 40 CFR 60 Subpart Kb that relies on an internal floating roof for compliance. A new storage tank is subject to the control requirements of 40 CFR 60 Subpart Kb if it has a design capacity greater than or equal to 151 m<sup>3</sup> (approx. 39,890 gal) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa (0.754 psia) but less than 76.6 kPa (11.1 psia) or with a design capacity greater than or equal to 75 m<sup>3</sup> (19,813 gal) but less than 151 m<sup>3</sup> (39,890 gal) containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa (4.00 psia) but less than 76.6 kPa (11.1 psia).
- b. Unless exempted pursuant to 35 IAC 215.122(c), an affected storage tank is subject to the control requirements of 35 IAC 215.122 with a storage capacity of greater than 250 gal is required to be equipped with a permanent submerged loading pipe or

an equivalent device approved by the Illinois EPA. The Illinois EPA has not approved any alternative control. [Submerged Loading Pipe - 35 IAC 215.122(b)]

- c. Each storage tank subject to 40 CFR 60 Subpart Kb is hereby shielded from compliance with 35 IAC 215.120, 215.127, 215.128, and 215.129. This shield is issued to streamline the applicable requirements for the source, based on the Illinois EPA's finding that compliance with 40 CFR 60, Subpart Kb assures compliance with 35 IAC 215.121, 215.127, and 215.128, following the review requirements of 40 CFR 60 Subpart Kb and 35 IAC 215.121, 215.127, and 215.128.

#### 1.6.4 Non-Applicable Regulations

- a. Each affected storage tank is not subject to the requirements of 40 CFR 60 Subpart K or Ka because the tanks were constructed after the date that the NSPS became applicable.
- b. An affected tank is not subject to the limitations of 35 IAC 215.121 - Storage Containers of VPL and 35 IAC 215.123 - Petroleum Liquid Storage Tanks, because three of the tanks are used solely for the storage of VOLs not defined as petroleum liquids (See Condition 1.7.7(a)) and the one tank containing petroleum liquid does not meet the size threshold for applicability. [35 IAC 215.121 and 215.123]
- c. Tanks T01 and T02 are not subject to the requirements of 40 CFR Subpart Kb because the Reid Vapor Pressure of the material stored is less than 0.754 psi.

#### 1.6.5 Control Requirements

- a. Each affected tank shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof [40 CFR 60.112b(a)(1)(ii)]:
  - i. A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.
  - ii. Two seals mounted one above the other so that each forms a continuous closure that

completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

- iii. A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.
- b. Each affected tank shall also be equipped with a permanent submerged loading pipe. [35 IAC 218.122(b)]

#### 1.6.6 Emission Limitations

Emissions of VOM from the affected storage tanks shall not exceed the following limits:

VOM Emissions	
<u>(Ton/Month)</u>	<u>(Ton/Year)</u>
0.4	1.88

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

#### 1.6.7 Operating Requirements

- a. Each affected tank is limited to the storage of ethanol or denaturant.
- b. Each affected tank shall be operated in compliance with the operating requirements of 40 CFR 60.112b(a)(1) and 60.113b(a), as follows:
  - i. The internal floating roof shall float on the liquid surface at all times, except during those intervals when the storage tank is being completely emptied and subsequently refilled and the roof rests on its leg supports. When the roof is resting on its leg supports, the process of emptying or refilling shall be continuous and shall be accomplished as rapidly as possible [40 CFR 60.112b(a)(1)(i)]

- ii. Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents shall provide a projection below the liquid surface. [40 CFR 60.112b(a) (1) (iii)]
- iii. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid which is maintained in a closed position at all times (i.e., no visible gaps) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a) (1) (iv)]
- iv. Automatic bleeder vents shall be equipped with a gasket and be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a) (1) (v)]
- v. Rim space vents shall be equipped with a gasket and be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a) (1) (vi)]
- vi. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a) (1) (vii)]
- vii. Each penetration of the internal floating roof that allows for the passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a) (1) (viii)]
- viii. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a) (1) (ix)]
- ix. A tank that is in-service shall be repaired or emptied upon identification in an inspection that the floating roof is not resting on the surface of the VOL, there is liquid

accumulated on the roof, the seal is detached, or there are holes or tears in the seal fabric. These actions shall be completed within 45 days of the inspection unless an extension is granted. [40 CFR 60.113b(a) (2) and (a) (3) (ii)]

- x. A tank that is empty shall be repaired prior to refilling the tank upon identification in an inspection that the floating roof has defects, the primary seal has holes, tears or other openings in the seal or seal fabric, or the secondary seal has holes, tears or other openings in the seal or seal fabric, or the gaskets no longer close off. [40 CFR 60.113b(a) (3) (ii) and (a) (4)]

#### 1.6.8 Inspection Requirements

The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 60.113b(a) for each affected tank equipped with an internal floating roof as follows:

- a. Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel. [40 CFR 60.113b(a) (1)]
- b. For affected storage tanks equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Illinois EPA in the inspection report required in Condition 1.7.10(a) (i) (40 CFR

60.115b(a)(3)). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(a)(2)]

- c. For vessels equipped with both primary and secondary seals, the Permittee shall visually inspect the affected storage tanks as follows: [40 CFR 60.113b(a)(3)]
  - i. Visually inspect the vessel as specified in Condition 1.6.8(d) at least every 5 years; or
  - ii. Visually inspect the vessel as specified in Condition 1.6.8(b) at least once every 12 months.
- d. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in Conditions 1.6.8(b) and (c)(ii) and at intervals no greater than 5 years in the case of vessels specified in Condition 1.6.8(c)(i). [40 CFR 60.113b(a)(4)]

Prior notification for the above inspection shall be given to the Illinois EPA as specified in Condition 1.6.10(b).

#### 1.6.9 Recordkeeping Requirements

- a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 60.115b for each affected tank pursuant to 40 CFR 60.115b(a), as follows:

Keep a record of each inspection performed as required by Condition 1.6.8. [40 CFR 60.115b(a)(2)]

- i. The date the inspection was performed;
  - ii. Who performed the inspection;
  - iii. The method of inspection;
  - iv. The observed condition of each feature of the internal floating roof (seals, roof decks and fittings), with the raw data recorded during the inspection; and
  - v. Summary of compliance.
- b. The Permittee shall maintain records of the following for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 1.6.8(d):
- Sufficient records to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect.
- c. The Permittee shall keep the operating records required by 40 CFR 60.116b for each affected tank, as follows:
- Records of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]
- d. The Permittee shall maintain records of the VOM emissions from each affected storage tank in accordance with the procedures outlined in Condition 1.6.12, so as to demonstrate compliance with the emission limitations of Condition 1.6.6.
- e. Monthly records of VOM emissions attributable to the affected storage tanks, with calculations in tons/month and ton/year. Annual emissions shall be determined each month based upon emissions for the month record plus the emissions of the 11 previous months.

1.6.10 Reporting Requirements

- a. The Permittee shall fulfill all applicable reporting and notification requirements of the NSPS, 40 CFR 60.7, for the affected tanks.
- b. The Permittee shall submit written notifications and reports to the Illinois EPA as required by the NSPS, for each affected tank, as follows:
  - i. If any of the conditions described in Condition 1.6.8(b) are detected during the annual visual inspection required in Condition 1.6.8(b), a report shall be furnished to the Illinois EPA within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]
  - ii. After each inspection required in Condition 1.6.8(c) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in Condition 1.6.8(c)(ii), a report shall be furnished to the Illinois EPA within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of Conditions 1.6.5(a), 1.6.7(b) or 1.6.8(c) and list each repair made. [40 CFR 60.113b(a)(5)]
- c. The Permittee shall promptly notify the Illinois EPA of noncompliance with the control and operating requirements as follows:
  - i. Any storage of VOL in an affected tank that is not in compliance with the control requirements due to absence of the features required by Condition 1.6.5, e.g., no "secondary seal," within five days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps taken to avoid future non-compliance.
  - ii. Any storage of VOL in an affected tank that is out of compliance with the control requirements (Condition 1.6.5) due to damage,

deterioration, or other condition of the tank, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

- iii. Any exceedance of the emission limits and operational requirements shown in Conditions 1.6.6 and 1.6.7(a), respectively.

#### 1.6.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected tank without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to continue to comply with applicable requirements and to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in seal type and configuration, made during the course of normal repair and maintenance of an affected storage tank's floating roof.

#### 1.6.12 Compliance Procedures

Emissions from each affected storage tank shall be determined through the use of the most current version of the TANKS program.

1.7 Group 7: Loading Racks  
Control: Two Flares

1.7.1 Description

Loading racks are used to load ethanol into trucks and rail cars. The VOM emissions occur when material is loaded from the VOM-laden air displaced from the tank.

1.7.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Truck Loading Rack	Loading Rack Used for Loading Ethanol Into Tank Trucks	Natural Gas-Fired Flare
Rail Car Loading Rack	Loading Rack Used for Loading Ethanol Into Rail Cars	Natural Gas-Fired Flare

1.7.3 Applicability Provisions and Applicable Regulations

An "affected loading rack," for the purpose of these unit-specific conditions, is a loading rack described in Conditions 1.7.1 and 1.7.2.

1.7.4 Non-Applicability of Regulations of Concern

- a. The affected loading rack will not load gasoline and hence will not be subject to the requirements applicable to handling of gasoline, including 40 CFR 60 Subpart XX, (the New Source Performance Standard (NSPS) for Bulk Gasoline Terminals).
- b. The affected loading rack is excused from the requirement to use submerged loading pipes pursuant to 35 IAC 215.122(a) because each affected loading rack is equipped and operated with vapor collection and control equipment.

1.7.5 Control Requirements and Operational Limitations

- a. The total organic compound emissions from the affected loading rack and associated vapor collection control unit shall not exceed 0.33 pounds per 1000 gallons of material loaded. This rate shall include those emissions not captured or controlled.
- b. The Permittee shall not cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading into any tank truck or trailer unless such

loading area is equipped with submerged loading pipes or a device that is equally effective in controlling emissions and is approved by the Illinois EPA according to the provisions of 35 IAC 201, and further processed consistent with 35 IAC 218.108. At the time of issuance of this permit, the Illinois EPA has not approved any alternative to the submerged loading pipes. [35 IAC 218.122(a)]

- c. Ethanol throughput through the loading rack shall not exceed the following limits:

Organic Material Throughput	
<u>(Gal/Month)</u>	<u>(Gal/Year)</u>
6,000,000	36,000,000

- d. The vapor control system shall be operated at all times during the loading of organic liquids and all displaced vapors are to be vented only to the vapor control system.
- e. At all times during the loading of organic liquids, the vapor control system shall operate and all vapors displaced in the loading of organic materials are to be vented only to the vapor control system.
- f. There shall be no liquid drainage from the loading device of an affected loading rack when it is not in use.
- g. The Permittee shall provide a pressure tap or equivalent on the vapor collection system associated with an affected loading rack. The vapor collection system and the organic material loading equipment shall be operated in such a manner that it prevents avoidable leaks of liquid during loading or unloading operations and prevents the gauge pressure from exceeding 18 inches of water and the vacuum from exceeding 6 inches of water and to be measured as close as possible to the vapor hose connection.
- h. A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/2-78-051 Appendix B, incorporated by reference in 35 IAC 218.112.
- i. All loading and vapor return lines shall be equipped with fittings that are designed to be vapor tight.

1.7.6 Emission Limitations

- a. Emissions of VOM from the affected loading racks shall not exceed the following limits:

VOM Emissions	
<u>(Ton/Month)</u>	<u>(Ton/Year)</u>
0.2	0.93

Compliance with annual emission limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

- b. This permit is issued based on negligible emissions of NO<sub>x</sub> and CO from the flare associated with the affected truck loading rack. For this purpose, emissions of each pollutant shall not exceed 0.1 lb/hr and 0.44 tons/year.

1.7.7 Testing Requirements

See Condition 2 for testing requirements

1.7.8 Instrumentation and Monitoring Requirements

The Permittee shall maintain and operate the rail loadout scrubber with instruments to measure the following operating parameters:

- a. The pressure loss of the gas stream through the scrubber. The monitoring device must be accurate within  $\pm 0.5$  psig.
- b. The scrubbing liquid flow rate or supply pressure to the scrubbing chamber. The monitoring device must be accurate within  $\pm 5$  percent of the design scrubbing liquid supply pressure.

1.7.9 Recordkeeping Requirements

- a. General Recordkeeping

The Permittee shall maintain records of the following for the affected loading racks:

The properties of the fuel ethanol distributed through the affected loading racks, as related to emissions, i.e., storage temperature, vapor pressure and molecular weight;

b. Records of Operations

The Permittee shall maintain records of the following for the affected loading rack and associated vapor control unit:

- i. The amount of material distributed through each affected loading rack, gal/month, and gal/year.
- ii. Annual emissions of VOM from the each affected loading rack, with supporting calculations.

c. Inspection Requirements

The Permittee shall keep the records for inspection of each affected loading rack that includes, as a minimum, the following information:

- i. Date of inspection;
- ii. Findings (may indicate no leaks discovered; or location, nature, and severity of each leak);
- iii. Leak determination method;
- iv. Corrective action, including the date each leak was repaired and the reasons for any repair interval in excess of 15 days; and
- v. Name and signature of the person that performed the inspection.

1.7.10 Reporting Requirements

The Permittee shall provide an annual report, to be submitted with the source's annual emission report, which includes the following:

- a. The monthly and annual throughputs for each affected loading rack for each month of the previous calendar year, in gallons/month and gallons/year.
- b. Any deviations to the requirements of Conditions 1.7.4 through 1.7.9.

1.7.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to these units without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's

obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in fittings or seal type configuration, made during the course of normal repair and maintenance of an affected loading rack.

1.7.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.7.6 shall be based on the records required by Condition 1.7.9, the use of appropriate emission factors, including published USEPA emissions factors, and standard AP-42 emission factors, as control systems are properly operated.

1.8 Group 8: Roadways and other sources of fugitive dust

1.8.1 Description

Fugitive dust/particulate matter emissions are generated by activities such as material handling operations and vehicle traffic on roadways.

1.8.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
"Area Sources" of dust  EP 14	Vehicle Traffic, Paved and Unpaved Plant Roads and Parking Lots	Water Suppressant control, as necessary Secondary Seals
	Occasional Bulk Unloading, Bag and Other Container Handling	Closed containers
	Loading to temporary grain storage piles	Covered tarp

1.8.3 Applicable Regulations

- a. The "affected operations" for the purpose of these unit-specific conditions are the operations described in Condition 1.8.1 and 1.8.2.
- b. Visible emissions of fugitive particulate matter from any process, including material handling or storage activity, shall not be present beyond the property line of the source, pursuant to 35 IAC 212.301.

1.8.4 Non-Applicability of Regulations of Concern

- a. The affected operations are not subject to the requirements of 35 IAC 212.304 through 310 or 312 or 316, because the source is not located in an area where those rules apply.
- b. The affected operations are not subject to the requirements of 35 IAC 212.321 ("the process weight rate" rule) because fugitive emitting operations are not processes that can be vented to a control device.

1.8.5 Operational and Production Limits and Work Practices

- a. The Permittee shall follow good air pollution control practices to minimize nuisance fugitive dust from plant roads, parking areas, and other open areas of the plant. These practices shall provide for pavement on all regularly traveled entrances and

exits to the plant and treatment (sweeping and water suppressant application, etc., when necessary) of paved and unpaved roads and areas that are routinely subject to vehicle traffic in order to achieve effective control of dust (nominal 80 percent for paved roads and areas and 50 percent control for unpaved roads and areas).

- b. Emissions of fugitive particulate matter from DDGS loadout shall be controlled by partial enclosure and loadout practices to minimize breakage.

1.8.6 Emission Limitations

- a. Emissions of PM from the affected operations shall not exceed 14.44 tons per year.
- b. Emissions of PM/PM10 from the temporary grain storage pile, occasional bulk unloading, bag and other container handling shall be assumed to be negligible, i.e., not to exceed 0.1 lb/hr and 0.44 tons/year.

1.8.7 Testing Requirements

None

1.8.8 Monitoring Requirement

None

1.8.9 Recordkeeping Requirements

- a. The Permittee shall maintain a written fugitive dust control program describing the measures being implemented to demonstrate compliance with 1.8.3, 1.8.5 and 1.8.6, to control fugitive dust at each area of the plant with the potential to generate significant quantities of fugitive dust. This program shall include: (i) A map or diagram showing the location of all fugitive emission units controlled, including the location, identification, length, and width of roadways, and volume and nature of expected traffic or other activity; (ii) estimated dust emissions control technique (e.g., water spray surfactant spray, water flushing, or sweeping); (iii) typical flow of water and additive concentration; (iv) normal frequency with which measures would be implemented; circumstances, e.g., recent precipitation, in which the measure would not be implemented; triggers for additional control, e.g., observation of 10 percent opacity; and calculated control efficiency.

- b. The Permittee shall maintain records documenting implementation of the fugitive dust control program, including:
  - vii. For each application of water to roadways by truck: the name and location of the roadway controlled, application rate of each truck, frequency of each application, width of each application, identification of each truck used, and total quantity of water used for each application;
  - viii. A log recording incidents when control measures were not used and a statement of explanation.
- c. The Permittee shall submit a copy of a revised fugitive dust control program to the Illinois EPA for review within 90 days of a request from the Illinois EPA for a revision to the program to address observed deficiencies in the control program.

#### 1.8.10 Reporting Requirements

- a. The Permittee shall submit an annual report to the Illinois EPA stating the following: the dates any necessary control measures were not implemented, a listing of those control measures, the reasons that the control measures were not implemented, and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not applied based on a belief that application of such control measures would have been unreasonable given prevailing atmospheric conditions. This report shall be submitted to the Illinois EPA no later than 45 calendar days from the end of each calendar year.
- b. The Permittee shall promptly notify the Illinois EPA, of other noncompliance of the affected operations with the permit requirements as follows. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

#### 1.8.11 Operational Flexibility/Anticipated Operating Scenarios

None

1.8.12 Compliance Procedures

Compliance with Condition 1.8.6 shall be based on the records required by Condition 1.8.9 and the use of appropriate emission factors.

1.9 Group 9: Leaking Components  
Control: None

1.9.1 Description

Equipment components, such as valves, flanges, etc., involved with the fermentation, distillation and subsequent handling of ethanol and denaturant generate VOM emissions when they leak.

1.9.2 List of Emission Equipment and Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Equipment Components (Valves, Flanges, Pump Seals, Etc.) EP 9	Leaks that occur in the piping system	Work Practices and Equipment Replacement

1.9.3 Applicability Provisions

- a. The "affected units" are equipment components, described in Condition 1.9.1 and 1.9.2 that are in VOM service.
- b. Pursuant to 35 IAC 215.142, no person shall cause or allow the discharge of more than 32.8 ml (2 cu in) of volatile organic liquid (VOL) with vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F) into the atmosphere from any pump or compressor in any 15 minute period at standard conditions.

1.9.4 Non-Applicable Regulations

None

1.9.5 Control Requirements

The Permittee shall use good work practices to minimize emissions from leaking components.

1.9.6 Emission Limitations

Emissions of VOM from the affected components shall not exceed 10.64 tons per year.

1.9.7 Operating Requirements

The Permittee shall repair any affected component from which a leak of volatile organic liquid (VOL) is detected

or observed. The repair shall be completed as soon as practicable but no later than 21 days after the leak is found. If the leaking component cannot be repaired until the process unit is shut down, the leaking component must then be repaired before the unit is restarted.

1.9.8 Inspection Requirements

The Permittee shall visually inspect for leaks from all affected components on at least a monthly basis.

1.9.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the piping components at the source to demonstrate compliance with Condition 1.9.4.

- a. The number of components (i.e., valves, pump seals, etc.) in light liquid, heavy liquid or vapor service, as applicable.
- b. Emissions of VOM attributable to fugitive losses (valves, pump seals, etc.), tons/year, with supporting calculations, calculated utilizing the compliance procedures in Condition 1.9.12 or other approved USEPA methodology;

1.9.10 Reporting Requirements

None

1.9.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to these units without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

The repair and replacement of components.

1.9.12 Compliance Procedures

Compliance with the unit-specific emission limits of Condition 1.9.6 shall be based on the records required by Condition 1.9.9 and the use of appropriate USEPA emissions factors for VOM losses from connectors, flanges, valves, loading arms, pumps and other leaking components.

1.10 Group 10: Fly Ash Handling

1.10.1 Description

Fly ash recovered by the baghouse on Boiler 1 is transferred to the fly ash storage silo. Displaced air from the fly ash storage silo is filtered through the bin vent dust filter. Stored fly ash is subsequently loaded out wet to trucks by mixing with water in the hydromix conditioner located under the fly ash storage silo.

1.10.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Equipment	Description	Emission Control Equipment
EP 1-C	Fly Ash Handling Units	Ash Loadout Aspiration (EP 1-C)	Bag Filter
EP 1-G		Enclosed Fly Ash Storage Silos	Bin Vent Filter

1.10.3 Applicability Provisions and Applicable Regulations

- a. An "affected unit" for the purpose of these unit specific conditions is equipment described in Conditions 1.10.1 and 1.10.2.
- b. The affected units are subject to 35 IAC 212.322(b) (1), which provides that:
  - i. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in subsection (c) of 35 IAC 212.321.
  - ii. The affected units are subject to the opacity limitations of 35 IAC 212.123 and 212.301 (see Conditions 3(b) (i) and (ii)).

1.10.4 Non-Applicability of Regulations of Concern

None

1.10.5 Operational and Production Limits, and Work Practices

The Permittee shall maintain and repair all air pollution control equipment in a manner that assures that the emission limits and standards in 35 IAC 212.321 shall be met at all times. Proper maintenance shall include the following minimum requirements:

- a. Visual inspection of air pollution control equipment;
- b. Maintenance of an adequate inventory of spare parts;  
and
- c. Expeditionary repairs, unless the emission unit is shutdown.

1.10.6 Emission Limitations

Emissions of particulate matter from all affected units shall not exceed 0.60 lb/hr and 2.62 tons/year. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

1.10.7 Testing Requirements

See Condition 2.0

1.10.8 Monitoring Requirements

None

1.10.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for affected units:

- a. i. Records documenting inspections, maintenance, and repairs of all associated air pollution control equipment.
- ii. The Permittee shall document any period during which an affected unit was in operation when the air pollution control equipment was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation. These records shall include documentation of causes for pollution control equipment not operating or such malfunction and shall state what corrective actions were taken and what repairs were made.

- b. Total amount of fly ash handled, in tons/month and tons/year.
- c. Monthly and annual emissions of PM and PM<sub>10</sub> calculated in accordance with compliance procedures established in Condition 1.10.12.

#### 1.10.10 Reporting Requirements

The Permittee shall promptly submit written notifications and reports to the Illinois EPA, Compliance Section of non-compliance with the emission limitations and emissions of PM and other deviations as follows:

The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

#### 1.10.11 Operational Flexibility/Anticipated Operating Scenarios

None

#### 1.10.12 Compliance Procedures

- a. Compliance with the particulate matter limitations in Condition 1.10.3(b) is assumed to be achieved by the proper operation and maintenance of the pollution control equipment and the work-practices inherent in operation of the affected unit.
- b. Compliance with the unit-specific emission limits of Condition 1.10.6 shall be based on the records required by Condition 1.10.9 and the use of manufacturer guaranteed emissions factors.

## 2.0 Emission Testing

- a. i. Within 60 days after achieving the maximum production rate at which the affected units will be operated, but not later than 180 days after initial startup, the Permittee shall have tests conducted as stated below, as follows, at its expense by an approved testing service while the units are operating at maximum operation/load and other representative operating conditions.

Note: The units and pollutants to be tested:

<u>Unit/Process</u>	<u>VOM</u>	<u>PM/PM10</u>	<u>NO<sub>x</sub></u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>HCl</u>
Boiler 1	X	X	X	X	X	X
Boiler 2	X		X	X		
Raw Grain Dryer		X	X	X		
Fuel Handling		X				
Grain Handling/Processing		X				
Fermentation	X					
Distillation/DDGS Drying	X					
Loading Rack	X					
Railcar Ethanol Loading	X					
Fly Ash Processing		X				

- ii. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for the affected units within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.
- b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the Illinois EPA. Refer to 40 CFR 60, Appendix A for USEPA test methods.

	<u>USEPA Method</u>
Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture Content	Method 4
Nitrogen Oxides	Method 7, 7E or 19*
Opacity	Method 9
Carbon Monoxide	Method 10
Volatile Organic Material	Method 25A
Sulfur Dioxide	Method 6C
Particulate Matter (PM)	Method 5 or 5D
Hydrogen Chloride	Method 26
PM <sub>10</sub>	Method 201A
Condensable PM <sub>10</sub>	Method 202

\* as specified in 40 CFR 60.48b(d)

- c. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification and test protocol for the expected date of testing shall be submitted a minimum of sixty days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.
- d. Three copies of the Final Report for these tests shall be promptly submitted to the Illinois EPA and in no case later than 60 days after the test and shall include as a minimum:
  - i. A tabular summary of results which includes:
    - Process rates (i.e., rate of grain processed, tons/hr of coal feed, etc.)
    - DDGS Dryer operating parameters (i.e., operating temperature and oxygen content in the flue gas leaving the dryers)
    - Measured emission rates of all pollutants measured
    - Emission factor, calculated using the average test results in the terms of the applicable limits, for example, in units of lbs pollutant emitted per ton of ethanol produced
    - Compliance demonstrated - Yes/No
  - ii. Description of test methods and procedures used, including description of sampling train, analysis equipment, and test schedule.
  - iii. Detailed description of test conditions, including:
    - Pertinent process information (e.g. fuel, raw material analysis)
    - Control equipment information, i.e. equipment condition and inlet pressures, flow rates, and other operating parameters at various points in the CO<sup>2</sup> scrubber during testing
  - iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

### 3.0 General Plantwide Conditions

- a. Sourcewide operating limitation
  - i. The annual amount of grain processed into ethanol at the plant shall not exceed 15.0 million bushels. Compliance with this annual limit shall be determined from a running total of 12 months of data.
  - ii. Ethanol production from the plant shall not exceed 4.0 million gallons/month and 36 million gallons/year.
- b. Sourcewide Operation and Emission Limitations
  - i. Plantwide emissions shall not exceed the limitations shown in Table I.
  - ii. This permit is issued based on the source not being a major source for Hazardous Air Pollutants (HAP), and therefore will not be subject to the requirements of Section 112(g) of the Clean Air Act.
- c. Emission units at this source are subject to the following regulations of general applicability:
  - i. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.
  - ii. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.
- d. The Permittee shall maintain records of all public inquiries regarding operations related to emissions, submit these records to the Illinois EPA upon request and provided to the public if requested.
- e. Shakedown Notification and Reporting
  - i. The Permittee shall provide the Illinois EPA 30 days advance notification prior to start-up to allow inspection, and shall include a description of provisions for handling and timely disposition of feed that cannot be dried.

- ii. The Permittee shall provide to the Illinois EPA immediate notification of any event(s) that disrupts order shakedown of the plant.
- iii. The Permittee shall provide to the Illinois PEA progress reports, including, but not limited to, the following:
  - A. Overall operating level (gallons produced), feed production, and percent feed dried;
  - B. Activities accomplished/significant events;
  - C. Current schedule for emission testing;
  - D. A summary of any emission measurements conducted at the plant; and
  - E. Outreach activities planned/provided for local communities or interested parties.
- iv. The Permittee shall provide to the Illinois EPA notice as to when shakedown of the coal-fired boiler is considered complete.
- f.
  - i. This approval to construct does not relieve the Permittee of the responsibility to comply with all Local, State and Federal Regulations which are part of the applicable Illinois State Implementation Plan, as well as all other applicable Federal, State and Local requirements.
  - ii. In particular this permit does not excuse the Permittee from the obligation to undertake further actions at the source as may be needed to eliminate air pollution, including nuisance due to odors, such as raising the height of stacks, using alternative scrubbant materials, installing back-up control systems, altering process conditions in the dryers, or firing other fuels.
- g.
  - i. Any reports and notifications required by this permit shall be sent to the Illinois EPA at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Enforcement Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276
  - ii. A copy of these reports and notifications, shall also be sent directly to the Illinois EPA's regional office at the following address:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
5415 North University  
Peoria, Illinois 61614

- iii. A copy of these reports and notifications concerning emission testing and initial installation and certification of continuous emission monitoring systems shall also be sent directly to the Illinois EPA's Source Monitoring Unit at the following address:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Source Monitoring Unit  
9511 West Harrison  
Des Plaines, Illinois 60016

If you have any questions on this permit, please call Bob Smet at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:RPS:jar

cc: Region 2

Table I: Primary Operating Scenario Emission Summary - Tons/Year

Emission Unit Description		NO <sub>x</sub>	CO	VOM	PM	SO <sub>2</sub>	HCl
		TONS/YR	TONS/YR	TONS/YR	TONS/YR	TONS/YR	TONS/YR
EP 1-A	Boiler 1 - Coal / Co-Gen	90.00	87.00	20.00	36.60	95.20	9.2
EP 1-B	Fuel Handling	---	---	---	1.90	---	---
EP 1-C and EP 1-G	Fly Ash Handling	---	---	---	2.62	---	---
EP 1-E	Lime Storage Bin Vent	---	--	--	0.44	---	--
EP 2-B	Secondary Boiler <sup>A</sup>	4.00	6.72	0.44	0.61	0.05	---
EP 3 and EP 4	DDGS Dryers <sup>B</sup>	---	---	---	---	---	---
EP 5-A	Fermentation <sup>C</sup>	---	---	8.43	0.44	---	---
EP 5-B	Cooling Tower	---	---	---	4.92	---	---
EP 5-C	Distillation Process Scrubber <sup>A</sup>	---	---	---	---	---	---
EP 7	Ethanol Loading Racks	0.44	0.44	0.93	---	---	---
EP 8	Storage Tanks	---	---	1.88	---	---	---
EP 9	Fugitive Leaks	---	---	10.64	---	---	---
EPs 10, 11 and 12	Grain Handling Activities	---	---	---	4.92	---	---
EP 13-A	DDGS Loadout		---	---	7.35	---	---
EP-14	Fugitive Dust (Roads, Temporary Grain Storage Handling and Misc. Container Handling)	---	---	---	14.88	---	---
EP-15	Methanator Flare <sup>D</sup>	0.44	0.44	0.44	---	---	---
EP-17	Raw Grain Dryer	1.28	2.14	0.14	12.51	0.02	---
	<b>FACILITY WIDE TOTALS</b>	<b>96.16</b>	<b>96.74</b>	<b>42.90</b>	<b>87.19</b>	<b>95.27</b>	<b>9.2</b>

Notes:

- A. Additional emissions from the secondary boiler have been estimated based on 1,000 hours/yr and are included in the primary operating scenario as a worst case estimate for purposes of demonstrating compliance with respect to the PSD applicability threshold (Special Condition 1.1.5b(iii)).
- B. If the primary boiler is shutdown, there is a potential for direct emergency venting of emissions from the DDGS Dryers and Distillation Process Scrubber. The primary operating scenario presented in Table I includes the controlled emissions from these processes in the coal fired boiler emissions. Direct emergency venting will not occur more than 325 hours/yr (Special Condition 1.5.5a). Facility wide emissions for this worst case scenario are presented on Table II.
- C. The emissions from the CO<sub>2</sub> scrubber will only occur when the CO<sub>2</sub> plant is not operating (Special Condition 1.4.6a).
- D. The Anaerobic Digester (Methanator) Flare will operate no more than 500 hours per year. The flare will only be used when the primary boiler is shutdown. Additional emissions from the Anaerobic Digester Flare have been estimated based on 500 hours/yr and are included in the primary operating scenario as a worst case estimate for purposes of demonstrating compliance with respect to the PSD applicability threshold.

Table II: Alternate Operating Scenario Emission Summary - Tons/Year <sup>A</sup>

Emission Unit Description		NO <sub>x</sub>	CO	VOM	PM	SO <sub>2</sub>
		TONS/YR	TONS/YR	TONS/YR	TONS/YR	TONS/YR
EP 1-A	Boiler 1 - Coal / Co-Gen <sup>B</sup>	83.32	80.54	18.52	33.88	88.14
EP 1-B	Fuel Handling	---	---	---	1.90	---
EP 1-C and EP 1-G	Fly Ash Handling	---	---	---	2.62	---
EP 1-E	Lime Storage Bin Vent	---	--	--	0.44	--
EP 2-B	Secondary Boiler <sup>B</sup>	2.60	4.37	0.29	0.40	0.03
EP 3 and EP 4	DDGS Dryers <sup>C</sup>	---	11.29	55.38	5.27	---
EP 5-A	Fermentation <sup>D</sup>	---	---	8.43	0.44	---
EP 5-B	Cooling Tower	---	---	---	4.92	---
EP 5-C	Distillation Process Scrubber <sup>C</sup>	---	---	0.58	---	---
EP 7	Ethanol Loading Racks	0.44	0.44	0.93	---	---
EP 8	Storage Tanks	---	---	1.88	---	---
EP 9	Fugitive Leaks	---	---	10.64	---	---
EPs 10, 11 and 12	Grain Handling Activities	---	---	---	4.92	---
EP 13-A	DDGS Loadout		---	---	7.35	---
EP-14	Fugitive Dust (Roads, Temporary Grain Storage Handling and Misc. Container Handling)	---	---	---	14.88	---
EP-15	Methanator Flare <sup>E</sup>	0.44	0.44	0.44	---	---
EP-17	Raw Grain Dryer	1.28	2.14	0.14	12.51	0.02
	<b>FACILITY WIDE TOTALS</b>	<b>88.08</b>	<b>99.92</b>	<b>97.08</b>	<b>89.33</b>	<b>88.19</b>

Notes:

- A. Worst case alternate operating scenario for purposes of demonstrating compliance with respect to the PSD applicability threshold.
- B. Emissions shown for the primary boiler have been adjusted to reflect reduced operations. Assume secondary boiler will be operated 650 hours/yr. During 325 hours of this 650 hour period, emergency venting from the DDGS dryers will occur as allowed by Special Condition 1.5.5a. Additional time beyond this 325 hour period, the DDGS Dryers will not operate. This scenario has been included as a worst case estimate. Emissions from the primary boiler have been reduced incrementally due to the secondary boiler operating during this 650 hour period.
- C. If the primary boiler is shutdown, there is a potential for direct emergency venting of emissions from the DDGS Dryers and Distillation Process Scrubber. The operating scenario presented in Table II includes the worst case emissions as a result of emergency venting operations. Direct emergency venting will not occur more than 325 hours/yr (Special Condition 1.5.5a).
- D. The emissions from the CO<sub>2</sub> scrubber will only occur when the CO<sub>2</sub> plant is not operating (Special Condition 1.4.6a).
- E. The Anaerobic Digester (Methanator) Flare will operate no more than 500 hours per year. The flare will only be used when the primary boiler is shutdown. Additional emissions from the Anaerobic Digester Flare have been estimated based on 500 hours/yr and are included in the this operating scenario as a worst case estimate for purposes of demonstrating compliance with respect to the PSD applicability threshold.

## I. INTRODUCTION

Central Illinois Energy Cooperative (CIEC) has applied for a permit for the construction of an ethanol plant near Canton. The plant will be designed to produce up to 36 million gallons of fuel ethanol per year, based on a throughput of 15.0 million bushels of corn. The proposed construction permit contains emission standards and other applicable requirements and appropriate compliance procedures to assure that the source is operated in accordance with those requirements.

## II. SOURCE DESCRIPTION

CIEC will manufacture ethanol from corn through fermentation, in which yeast converts the starch in corn to ethanol. This process and related distillation processes, used to separate ethanol product from water, can emit volatile organic material (ethanol). To dry the grain, the plant will use as its heat source a coal-fired boiler.

## III. EMISSION UNITS

Emission Unit	Description	Emission Control Equipment
Boilers 1 & 2	Fuel combustion to supply steam heating	Flue Gas Desulfurization, Selective Catalytic Reduction and Low NO <sub>x</sub> Burner
Fuel Handling	Coal conveyance and handling equipment	Bin dust filters
Grain Handling/Processing	Grain conveyance and handling equipment	Bag Filters
Fermentation and Distillation/DDGS Drying	Reactors and tanks to react enzymes with corn starch	Boiler 1 and 2
Storage Tanks	Tanks to store ethanol	Floating Roof
Loading Rack	Trucks and railcar loadout	Flare (for Trucks) and Flare (for rail)
Dust and Leaking Components	Non-Point source operations, such as roadways and valves	Dust Suppressant

## IV. EMISSIONS

This plant does not constitute a major new source, that is, the project is not subject to the requirements imposed by the federal rules under the Prevention of Significant Deterioration (PSD).

The proposed permit limits the potential annual emissions from the ethanol plant to levels below those at which the federal rules for PSD would have applied, i.e., to below 100 tons/year. The source has requested that the Illinois EPA establish such conditions in the permit, consistent with the information provided in the application.

## V. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emissions standards represent the basic requirements for source in Illinois.

The ethanol plant will not be subject to Maximum Achievable Control Technology (MACT) under 112(g) of the Clean Air Act Amendments of 1990 because this plant will not be a major source of emissions for hazardous air pollutants.

VI. PROPOSED PERMIT

This permit contains conditions listing the applicable state and federal air pollution control requirements that apply to a source. The permit conditions also establish emission limits and appropriate compliance procedures. The appropriate compliance procedures include control requirements, operating requirements, work practices, testing, monitoring, recordkeeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the source is operating in accordance with the requirements of the permit.

VII. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets all applicable state and federal air pollution control requirements. The Illinois EPA is therefore proposing to issue a permit, subject to the conditions proposed in the draft permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. The source has requested a public hearing in which the public may provide these comments.

RPS: 057803AAD